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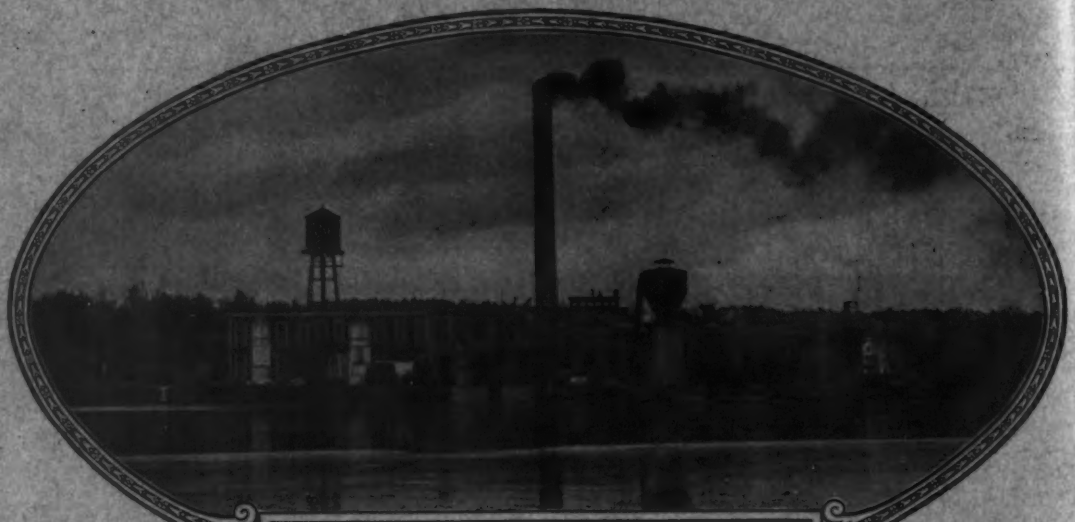

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PAPER TRADE JOURNAL

ESTABLISHED 1872

THE INTERNATIONAL WEEKLY OF THE PAPER AND PULP INDUSTRY AND THE PIONEER PUBLICATION IN ITS FIELD

FIFTY-FIFTH YEAR

Published Every Thursday by the

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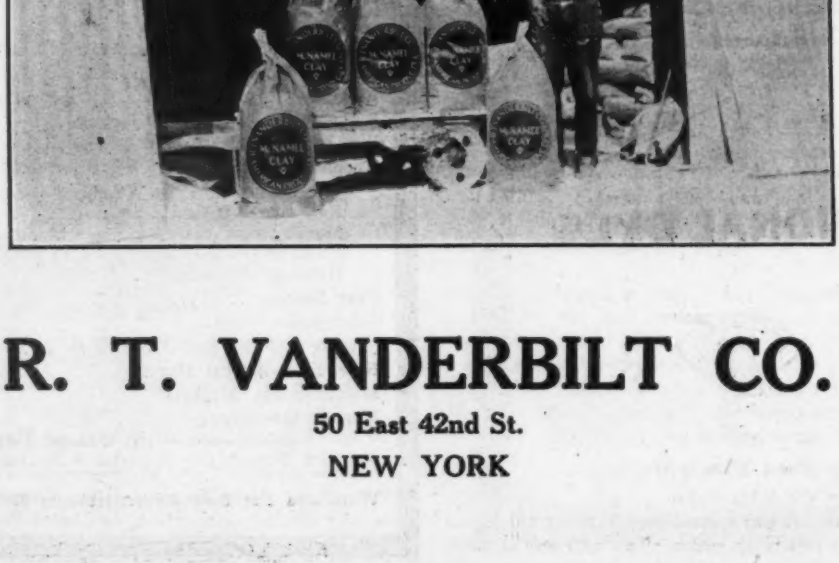

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PAPER

The Magazine of the Paper Industry

Vol. LXXXIV, No. 18 — Thursday, May 5, 1927

Eddy and Kieckefer Corps. To Merge

Consolidation Will Include Three Board Mills of the Eddy Paper Corp. Located at Three Rivers, and White Pigeon, Mich., The Kieckefer Mill at Delair, N. J., and the Great Kieckefer Container Factories at Milwaukee, Wis.—Other Concerns, It Is Rumored, May Be Acquired

[FROM OUR REGULAR CORRESPONDENT]

KALAMAZOO, Mich., May 2, 1927.—One of the most important board mill consolidations consummated in recent years, and now nearing completion, will result in the absorption of the Eddy Paper Corporation by the Kieckefer Container Corporation of Milwaukee, Wis., and Delair, N. J. The proceedings have advanced far enough, so that within a few days, the legal and capital set up of the merging companies will be known and announced.

What the Consolidation Will Do

Through this consolidation there will be combined under one management the three board mills of the Eddy Paper Corporation, located at Three Rivers and White Pigeon, Mich.; the Kieckefer mill at Delair, N. J., and the great Kieckefer container factories at Milwaukee. The daily capacity of the combined mills will exceed 1,000,000 pounds and practically all the board produced will be used in the company's container plant.

In connection with this transaction, it is rumored that other concerns in similar lines may be acquired, but nothing along that line is forthcoming as yet.

The directors of the two companies met in Chicago the past week and agreed on many important details of the merger. J. W. Keickefer is president of the concern that takes over the Eddy interests.

Eddy Paper Corp. in Lime Light

The Eddy Paper Corporation has been much in the limelight since 1922 when it succeeded the Eddy Paper Company of Michigan. This is due to the long drawn out and as yet unsettled legal battle to determine the relative status of common and preferred stockholders in the division of assets of the original Michigan corporation.

The Eddy Paper Company, with a paid in capital of approximately $10,000,000, was practically insolvent and only its liquidation by the Eddy Paper Corporation of Illinois prevented a receivership. As it was, the sale provided for acquisition of the outstanding stock holdings through the issuance of 125,000 shares of no par stock in the new corporation. The division of these 125,000 shares is the cause of the litigation.

One of Oldest Mills in Michigan

The original plant of the Eddy Paper Company is one of the oldest mills in Michigan. It was erected over 50 years ago by the French Brothers and is still in operation. This mill was acquired by the Gumbinsky interests and the Eddy Paper Company organized, through the erection of an immense board mill at Three Rivers, and the acquisition of the White Pigeon coated board mill and the plant of the defunct Oscar Felt Paper Company at White Pigeon, the concern is now recognized as one of the largest container board mills in America.

Awards on Timber in Tongass Region

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., May 3, 1927.—George T. Cameron, president and publisher of the San Francisco *Chronicle*, of San Francisco, Cal., has been awarded the contract by the U. S. Forest Service for the purchase of 835,000,000 cubic feet of pulp timber in the northern portion of the Tongass National Forest, bids for which were received on April 25. Mr. Cameron's was the only bid received.

The sale of a similar amount of pulp timber in the southern portion of the same Forest was awarded a couple of weeks ago to I. & J. D. Zellerbach, also of San Francisco. Both sales were widely advertised and the two awards comprise the largest sales of timber ever made by the Forest Service.

Mr. Cameron bid the minimum prices which it was stated in the advertisement would be considered. These prices included 60 cents per 100 cubic feet for spruce pulpwood; 30 cents for hemlock pulpwood; $1.50 per M feet B.M. for spruce and cedar sawlogs; $1.00 per M feet B.M. for hemlock sawlogs; 1½ cents per linear foot for the same 95 feet or less in length.

Mr. Cameron and his associates had previously filed an application with the Federal Power Commission for permit to develop the water power on the Long Lake and Crater Lake projects, about 50 miles from Juneau, Alaska. Under the terms of the timber offering, a paper mill of at least 200 tons daily capacity must be constructed during the next five years, and it is expected that this capacity will later be increased to 400 tons or more. The development of water power is necessary for the manufacture of news print paper in this region.

E. F. Yanke Goes With United Paper Board Co.

KALAMAZOO, Mich., May 2, 1927.—Emil F. Yahnke, formerly superintendent of the Standard Paper Company of this city, has accepted a similar position with the United Paperboard Company's mill at Lockport, N. Y.

Demand for Paper Improving in Philadelphia

Condition of Fine Paper Division Slightly Better, Due Mainly to Increased Interest of Southern Consumers—All Grades of Coarse Paper in Excellent Request for General Industrial Requirements—Paper Stock Situation

[FROM OUR REGULAR CORRESPONDENT]

PHILADELPHIA, Pa., May 2, 1927.—As the volume of springtime activities in the general commercial world increases, the Philadelphia paper trade assumes a broader scope of distribution. Although business has been growing, there is not the normal volume of paper moving from warehouses that should be in demand at this season. But, as the growth of industrial activities in this city and certain portions of the territory supplied by the local dealers assumes larger proportions the paper men experience a brisker demand for many grades of papers in the wrapping division. Prices continue to hold fairly well to the higher levels of last Fall with no immediate prospects of deductions from current values other than the slightly reduced prices on one or two grades that are not broadly distributed.

Fine Papers Move in Slightly Increased Volume

The fine paper dealers while experiencing a slightly improved market are complaining of the lack of normal springtime business which in other years has created a general demand for all grades of printing papers. This year their active paper supplies are confined to a limited number of standardized lines and these are sought only in hand to mouth requirements with no stocking for the future. The dealers supplying the Southern States report that there is greater demand in that section of the country than in the local territory. The printers in the South have enjoyed a fairly active seasonal demand for printed matter and their paper needs have outclassed those of Pennsylvania and other adjacent States who patronize the local distributors for their general supplies.

General Improvement in Wrapping Papers

Improvement in the coarse paper branch of the industry has been noted in the rapid extension of demand for all grades of kraft wrapping papers for general industrial needs, with a firmer price list than is usually made in late spring. While mercantile establishments have been the chief buyers, the demand within recent days has also been extending to the manufacturing trades. The Up State consumers are coming into the market for many grades of coarse papers that have not been active within late weeks and paper supplies moving from the city to these points are more generalized.

Rag Market Improved

While the rag market shows a slight improvement, paper stock continues to lag along in a listlessness that has no immediate prospect of turn for the better. Prices of the common grades are the lowest in many years. There is an abundance of the cheaper grades to be had at the lower levels, but the higher priced paper stocks are firmly held with very little incoming goods, and warehouses showing a shortage in accumulations. It is expected that prices on the higher grades will advance as soon as buying on the part of the mills is noted. While the mills are having their own way in the matter of quotations on the cheaper raw materials, they will soon have to pay higher rates for the better class of both rags and paper stocks, owing to the paucity of offerings.

Seasonal Demand for Building Papers

The open weather has stimulated the market for building papers but although the demand has been materially increased in all lines of builders supplies there has been no advance in values. Roofings, sheathing and felts are more active with the demand created by the opening of building operation in the State and in New Jersey.

Adjustment of Wholesale Stock Market

In the May meeting of the Wholesale Waste Merchants of Philadelphia there will be discussions of an informal nature by the membership but no official action will follow the organization of the packers in New York who have formed the Waste Materials Dealers Association during the week, for mutual protection of members. With an aim towards co-operation of mill men and the development of cordial relationship between the paper stock packers and the manufacturers the new organization plans to promote the interest of both, and alleviate the present unstaple conditions which have worked hardships upon the stock dealers through prolonged dullness and lack of buying on the part of the mills. Philadelphia dealers are working towards this goal by the institution of better packing and grading regulations established as schedules of the local organization. At the May meeting there will be an open forum discussion of the problem. For the past five months or more the Quaker City wholesale dealers have done very little business in the way of stock movements and prices in the local market for the commoner grades of stocks are so low that in many cases a loss in overhead of handling is entailed. There has been a gradual retirement from the stock trade of many of the smaller "junk dealers" who have been unable to survive the prolonged slump, and the local trade is confident that many more will go out of business and so effect a more stabilized condition and healthier price trend. It has been the experience of many stock dealers that mills are cutting their orders so as to divide business among all firms who have been affiliated with them in the past, and the multiplied number of stock dealers who have entered the industry since the war has created a limited distribution to the older and more firmly established wholesalers. It is anticipated that only those dealers who are able to financially weather the present demoralized market will survive, and so the trade again will be established on a sounder basis through elimination of the weaker dealers.

Mill Men Attend Funeral of W. H. O'Connor

Paper manufacturers of the state journeyed to Baltimore to attend the last rites of W. Harvey O'Connor, wholesale paper stock dealer, of Baltimore, Md., and Washington, D. C., whose tragic death occurred last Friday. Mr. O'Connor, who was 39 years of age, was burned to death in the fire which destroyed the Washington warehouse. He was caught in the elevator while ascending in the conveyor to the second floor during the fire and flames enveloped the shaft before he reached his floor. Surviving are his widow and three children.

Among the Pennsylvania mill men who attended the funeral of Mr. O'Connor were: Harry Quickal, Schmidt Ault Co., York, Pa.; J. Nelson, Hall Towne Paper Board Company; N. W. Way, Certainteed Products Company, Philadelphia; Lee Buck, Penn Fibre Board Company, and J. E. Smith, of the Chesepeake Paper Board Company.

Among the Philadelphia paper stock dealers who attended the funeral was William J. McGarity, secretary of the Philadelphia Association and head of the Penn Paper Stock Company, who was host to Mr. O'Connor at the annual banquet of the association in March.

Lisle Ownes, formerly superintendent of the Hemingway Company, has been associated with the O'Connor firm since severing

his connection with the Quaker City trade and will continue to look after the management.

Paper Canister Co. Expansions

Since the Paper Canister Company, formerly of 64th and Baltimore Avenue, removed to its own specially built plant at Fernwood, Delaware County, near Philadelphia, there has been effective an increased production in its various paper tubes and paper cans with metal tops and bottoms. The firm, of which W. F. Harrity, Jr., is head, is now producing an extensive assortment of mailing tubes in the spiral and wound types and mailing cases. There also are being made food containers, drug canisters, cleanser cans, and other paper containers where metal tops and bottoms are demanded, these being produced in all sizes from the smaller 1¼ inch diameter to the larger 6 inch diameter. Many innovations have been made to the new factory at Fernwood, where a large single story modern building has been specially erected.

Specialty Department for Eli Resnick & Son

The coarse paper house of Eli Resnick & Son, 2nd and Brown streets, is planning to extend its business with a specialty department devoted to the distribution of a line of soda fountain paper goods, paper dishes, spoons, cups, sanitary products, ice cream paper supplies, tissues and other goods for year round and summer trade. The new paper specialty department will be in operation in the coming month in time for the hot weather business. The firm has been engaged in the wrapping and coarse paper trade for several years and recently took possession of larger quarters at the 2nd and Brown street address.

Apex Paper Spool Co. Reorganized

Following the reorganization of the Apex Paper Spool Company, now located at 2844 D street, the firm has become a corporated business for the purpose of extending production. Formerly conducted by William Hooper, the business has at its helm president Julius Bux, vice president Alexander Y. Michie and treasurer I. B. Scovill. Mr. Hopper is now secretary and general manager of the company. There has been added to the plant new equipment which will give adequate facilities for the production of paper spools used by the textile industries for narrow fabrics and plug spools. Under the reorganized corporation, the production has been materially expanded.

George W. Ward at Hammermill Convention

President George W. Ward, of the D. L. Ward Paper Company, 28 S. 6th street, attended the sales convention of the Hammermill agents held at the Erie, Pa., mills during the past week. Sales representatives and the Hammermill distributors from various sections of the East attended the meeting.

New England Paper Men to Meet

The May Meeting of the New England Paper Merchants' Association will be held at Hartford, Connecticut, on May 11.

The meeting will take place in the evening with a dinner at the Hotel Bond at 7:30. It is planned to have a two day session and the following day will be spent at the Farmington Country Club where a golf tournament will be arranged. Luncheon will be served at the club and it is confidently expected that there will be a large attendance.

The following committee is in charge of the matter: A. H. Arnold, The Providence Paper Company, Providence, R. I.; C. W. Bond, The C. M. Rice Paper Company, Portland, Me.; C. K. Judd, The Judd Paper Company, Holyoke, Mass.; F. H. Blackman, The D. F. Munroe Company, Boston, Mass.; C. L. Beckwith, The H. W. Carter Paper Company, Springfield, Mass.; E. D. Bement, The C. A. Esty Paper Company, Boston, Mass.; W. H. Rourke, The Rourke Eno Paper Company, Inc., Hartford, Conn.

Members of the committee report that this will be a very interesting session and it is expected that well known speakers will address the meeting.

Pulpwood Consumption and Wood-pulp Production 1926

WASHINGTON, D. C., May 5, 1927.—The Department of Commerce announces that, according to data collected in cooperatoin with the Department of Agriculture, the total consumption of pulpwood in 1926 amounted to 6,766,007 cords, reported by 224 mills, as against 6,093,821 cords reported by 234 mills for 1925, an increase of 11 per cent. The total production of wood pulp in 1926 was 4,394,766 tons, an increase of 10.9 per cent as compared with 3,962,217 tons for the previous year.

The leading three States in this industry are Maine, Wisconsin, and New York. All these States, together with most of the other States reporting, showed increases as compared with 1925.

Detailed statistics are presented in the following tables. The figures for 1926 are preliminary and subject to such correction as may be found necessary upon further examination of the returns.

TABLE 1

WOOD CONSUMED AND PULP PRODUCED, BY STATES: 1926 AND 1925

[This table gives statistics for all States for which separate figures can be shown without disclosing the operations of individual establishments. Certain of the "All other States," however, reported larger amounts of pulpwood consumed and of pulp produced than some of the States shown separately.]

State	Pulpwood consumed (cords)		Pulp produced (tons of 2,000 pounds)	
	1926	1925	1926	1925
United States	6,766,007	6,093,821	4,394,766	3,962,217
Maine	1,298,357	1,240,340	945,790	917,632
Wisconsin	1,224,443	1,071,139	712,565	599,601
New York	990,701	904,283	822,131	770,777
New Hampshire	431,138	370,318	248,600	217,489
Pennsylvania	425,684	423,823	233,258	224,399
Michigan	331,570	275,152	200,604	161,063
Virginia	317,058	288,206	163,506	145,619
Washington	305,787	241,150	199,164	161,858
Minnesota	288,390	262,768	190,454	171,536
Louisiana	258,439	170,285	137,571	87,147
Massachusetts	54,510	54,306	34,903	32,672
Vermont	48,554	48,522	46,376	46,597
All other States(a)	791,376	743,529	459,844	425,827

(a) California, Delaware, District of Columbia, Georgia, Maryland, Mississippi, North Carolina, Ohio, Oregon, South Carolina, Tennessee, Texas, and West Virginia.

TABLE 2

WOOD CONSUMED, BY KINDS: 1926 AND 1925

Kind	Quantity (cords)		Per cent distribution	
	1926	1925	1926	1925
Total	6,766,007	6,093,821	100.0	100.0
Spruce:				
Domestic	2,415,870	2,253,219	35.7	37.0
Imported	1,013,155	818,143	15.0	13.4
Hemlock:				
Domestic	1,064,661	1,013,109	15.7	16.6
Imported	10,702	21,705	0.2	0.4
Yellow pine	684,816	531,157	10.1	8.7
Poplar:				
Domestic	212,178	206,982	3.1	3.4
Imported	210,133	195,938	3.1	3.2
Balsam fir:				
Domestic	254,614	214,600	3.8	3.5
Imported	42,500	52,590	0.6	0.9
Jack pine	137,494	102,040	2.0	1.7
Yellow poplar	134,747	145,871	2.0	2.4
Tamarack or larch	94,695	76,585	1.4	1.3
White fir	76,421	84,305	1.1	1.4
Gum	49,801	43,386	0.7	0.7
All other	183,553	177,975	2.7	2.9
Slabs and other mill waste	180,667	156,216	2.7	2.6

TABLE 3

PRODUCTION OF PULP,(a) BY PROCESSES: 1926 AND 1925

Process	Quantity (tons of 2,000 pounds)		Per cent of increase or decrease (—)
	1926	1925	
Total	4,394,766	3,962,217	10.9
Mechanical	1,774,192	1,629,689	8.9
Sulphite	1,599,776	1,447,191	10.5
Soda	496,920	472,647	5.1
Sulphate	523,878	412,690	26.9

(a) Including screenings.

To Represent Dudley Paper Co.

KALAMAZOO, Mich., May 2, 1927.—W. A. Stockbarger, until recently with the A. W. Walsh Company, will represent the Dudley Paper Company, of Lansing, in the Kalamazoo territory. He will cover this section of Michigan, retaining his residence here.

Big Canadian News Print Sales Merger Planned

Consolidation of Various Paper Mill Interests Under Consideration With View of Selling Output Through One Agency and Decreasing Overhead Expenses — Removal of Forest Products Laboratories to Ottawa Protested

[FROM OUR REGULAR CORRESPONDENT]

MONTREAL, Que., May 2, 1927.—The report is current here that a merger is being arranged between the St. Maurice Valley Sales Corporation, the Mead Sales Company, and the Canadian Export Paper Company. It, as is now claimed to be certain, if this plan goes through, the following companies will in future sell their output through one agency:

	Rated daily capacity in tons
Spanish River	720
Abitibi	520
Beaver Wood	70
St. Maurice Valley	915
Port Alfred	400
Fort William Paper	160
Laurentide	390
Price Brothers	740
Escanaba Paper	120
*Manitoba	200
†Ste. Anne Paper	250
Total tonnage	4,485

*Producing 100 tons; later will be increased.
†To start later in year.

It is taken for granted that the purpose of the consolidation is to control both output and price, but there will be no monopoly, as the present output of Canadian mills amounted to over 6,850 tons a day, which figure will be largely increased before the end of the year. However, five-sevenths of the Canadian news print output would be confined to two selling groups, the new selling organization and the International Paper Company. The mills in the province of Quebec not included in the merger include St. Lawrence, Wayagamack, E. B. Eddy, Donnacona and Brompton. Among those in Ontario which are not included are J. R. Booth, Ltd., the Backus-Brooks interests, and the Ontario Paper Company. Mills under construction which are not included are the Anglo-Canadian mills and the Lake St. John Power and Paper Company and the mills of the *New York Times* at Kapuskasing.

Gatineau Power Co.'s Petition Rejected

An important ruling in regard to the expropriation of water power has been given by the Quebec Public Service Commission. The Gatineau Power Company, a subsidiary of the International Paper Company, presented a petition for the expropriation of a smaller water power on a tributary of the Gatineau river, which water power will be partially flooded through operation of the Chelsea Falls dam. At the point where the Meach River falls into the Gatineau, F. T. Cross has harnessed the Meach River, built a dam, operates an electric power plant, a sawmill, a toy factory, and an aqueduct serving a number of houses. Part of the property would be flooded when Chelsea Falls dam is being utilized to the full. Hence the petition for expropriation of part of the Cross installation.

The Public Service Commission, however, quotes the Revised Statutes of Quebec, Section 18, which says: "Expropriation must, in no case, be undertaken to the prejudice of an industry already established, or of an aqueduct feeding a municipality in part or in whole." This, the judgment finds, was the law prior to the creation of Article 28K of the Public Service Commission Act, under which the company is asking for expropriation of the Cross water power, etc. The Commission therefore holds that it has no power to grant the request, and the judgment formally rejects the company's commission, with $1,000 costs.

Sabbath Work in Mills

Due to the intervention of the Quebec Government, paper making in all the mills in the Three Rivers district has ceased on Sundays. This is Premier Taschereau's claim in a manifesto he has just given out for publication. The Premier does not claim that work has ceased altogether, for, he says, there is still work which is claimed to be necessary.

Opposed to Removal of Laboratories

The Montreal Board of Trade has addressed a letter to the Hon. Charles Stewart, Minister of the Interior, Ottawa, protesting against the proposal that all the departments of the Forest Products Laboratories in Montreal, with the exception of the pulp and paper department, be removed to Ottawa. The letter says, in part:

"It would seem that the work can be carried on much better in a large industrial and shipping center such as Montreal than in Ottawa, where the number of industries is comparatively small, and we had hoped that the representations made a few years ago by Montreal interests, when a similar proposal was under discussion, had convinced your department of this fact.

"In addition to the advantages of being located at a large industrial center, the retention of the laboratories in close contact with McGill University must be of value, for the services of the technical staff and the scientific appliances of the university are readily available to the staff of the laboratories. The erection of the building for the pulp and paper division of the laboratories on the grounds of the university, by the Canadian Pulp and Paper Association, fixes the location of that division here, and it would seem in the highest degree inadvisable to separate the departments, whose work is closely interwoven, by removing the other three divisions to Ottawa.

"As a further fact indicating the desirability of retaining the laboratories in Montreal, the council would point out that an important part of their work concerns tie treatment for the railways; the headquarters of both of the large railways being in Montreal makes this location specially convenient."

The News Print Market in the United Kingdom

Harrison Watson, Canadian Trade Commissioner in London, in response to inquiries as to the prospects for marketing Canadian paper in England, has written to the Trade and Commerce Department an analysis of the situation in which he says: "The United Kingdom is a considerable importer of news print. The import figures for the period 1920-1925 were as follows (in cwts. of 112 pounds): 1920, 2,710,638; 1921, 2,407,214; 1922, 3,434,083; 1923, 3,239,965; 1924, 3,391,609; 1925, 3,892,278.

"It will be observed that the trend is towards increased importations. The chief contributors, in order of importance, are Newfoundland, Finland, Norway and Sweden. In addition to these supplies, there is a considerable production of news print in the United Kingdom itself, which was recently estimated by the Canadian Trade Commissioner in Glasgow at about 9,000,000 cwts., of which about 2,000,000 cwts. are at present being exported to overseas markets. The tendency also is for the English manufacturers to increase their production. Edward Lloyd & Co., Ltd., who operate the most important mills in the country, have recently extended their plant at Sittingbourne, near London, to a productive capacity of between 3,000 and 4,000 tons a week, and developments have also taken place in other directions.

"These facts point to a growing consumption of news print, which is evident in the recent decisions of certain leading London newspapers, notably the *Evening Standard* and the *Daily Mail*, to increase their size. If this policy is successful, it will doubtless be imitated by other journals and lead to a further general increase in the demand for news print.

"How far this additional consumption can be met from existing sources of supply, it is difficult to estimate. It should be remembered, however, that the important group of newspapers controlled by the Associated Newspapers, Ltd., operates its own mill in Newfoundland, while another important group—The Amalgamated Press, Ltd.,—is now, through a subsidiary undertaking, erecting a mill in the province of Quebec (the Anglo-Canadian Pulp and Paper Company, Quebec). The object of both these concerns is to render themselves independent in regard to supplies of raw materials.

"As regards the prospects for Canadian mills securing a regular share of the United Kingdom trade, up to the present the position has been that their output has been fully taken up by the domestic and United States markets, with the result that the United Kingdom has been more or less neglected, except for casual business.

"There is no doubt, however, that if Canadian manufacturers can meet the competition in this market of the Continental and local producers, they ought to be able to secure a part of the trade now held by Continental suppliers. As an indication of price conditions, an authority on the subject states that English manufacturers are selling news print at £15 15s. to £16 per long ton (2,240 pounds) delivered free at newspaper offices. Current quotations for Continental news print are £11 17s. 6d. per long ton f.o.b. Continental seaport. This means a landed cost of about £13 a ton. The above prices are for paper on reels, sheets being about £1 a ton dearer."

He adds that the opinion has been expressed that the North of England, Wales, and Ireland, offer an easier field for Canadian news print than London, as the largest English mills are near London, and moreover Finnish and Scandinavian shippers are in a particularly advantageous position for securing low freights to London.

Ownership of Grand Falls

The question as to whether Canada or Newfoundland owns the Grand Falls, in Laborador, is still an unsettled one, according to Charles Lanctot, deputy Attorney General for Quebec, for the experts, lawyers, and those specializing on law terminology, into whose hands the text of the Privy Council judgment was placed following its arrival in Quebec, have not yet finished their study, and until they present a report to the Quebec Government, no definite announcement on the subject can be made.

Proposed Lower Stumpage in N. B.

The Commission appointed by the New Brunswick Government to investigate conditions in the lumber industry has presented a report in which the following recommendations are made:

1.—The stumpage rates should be fixed for five years and should be reduced as follows:

	Pres. rate	Prop. rate
Spruce, pine and hacmatac	$3.50	$3.00
Poplar	3.00	2.00
Cedar	3.50	2.50
Hardwood	4.00	2.00

2.—That the annual license renewals, or so-called license mileage fees, should remain as at present for a period of not less than five years.

3.—That the tenure of leases, due to expire in 1933, be increased from 20 to 40 years from that date for pulp and paper mills, and from 10 to 50 years for saw mills.

4.—That the stumpage limit diameter be eliminated so far as pulp and paper licenses are concerned, and be lowered in case of saw-mill licenses to permit the cutting of undersized logs under approved regulations.

5.—That lower stumpage rates be made on "blowdown" timber.

6.—That the present scale be changed to one more favorable to the operator in case of smaller lumber.

The commission found that in the cutting of small logs the operator could not get from his lumber the feet of timber upon which he was charged stumpage. It found also that in converting board feet into cords at the scale of 600 feet to the cord the operator suffered, and recommended a change to 500 board feet for peeled wood and a stumpage rate of $1.75 per cord.

7.—That the present rate for fire protection be maintained and fixed for a period of not less than five years, and that greater expenditures be made for fire protection.

8.—That greater use be made of the advisory board, which is composed of experienced and competent lumbermen, in the administration of the crown lands.

There is considerable difference of opinion in the Legislature in regard to the recommendations, which are all in favor of the industry and at the expense of the treasury. The industry, however, has been passing through a period of depression, and it is argued that it should be given the opportunity which the recommendations would afford, especially as these recommendations would preserve the future of the Crown lands and afford the Province a fair rental for its forest yields.

New B. C. Sulphite Mill

Negotiations are under way by representatives of Eastern United States capital for operating under the charter of the Kootenay Pulp and Paper Company. The plans include a sulphite pulp plant of 200 tons per day capacity, and the development of the Graham Falls on Pend d'Oreille River. The plant would cost $3,000,000 and the power plant another $1,000,000.

To Abandon Section of Miami Canal

DAYTON, Ohio, May 2, 1927.—Governor A. V. Donahey failed to sign the De Armond bill providing for the abandonment of the southern section of the Miami & Erie canal, a proposition in which a number of paper mill men and business men in general were interested, but he did not veto it hence it became a law this week with just sufficient votes to carry it through, there having been a vigorous fight in both the Senate and House of the Ohio General Assembly on the measure.

It is not believed, however, that the abandonment of the waterway from Middletown through Hamilton to a point near Cincinnati (St. Bernard) will seriously embarrass paper mill owners. An amendment was incorporated providing that the waterway shall be used until January 1, 1929, which will give the mill owners ample opportunity to install motive power other than water.

There are quite a number of substantial industries along the waterway which have taken advantage of the water power afforded by the canal and hydraulic, and all of these will have to make changes. The entire cost of the changes, however, will not be so heavy, according to the report of an expert who made a survey of the situation and presented his figures to the Civic Association of Middletown, which largely sponsored the De Armond bill.

The Hamilton business interests were opposed to the measure, claiming the waterway still could be used for barge purposes in which event cheaper transportation rates could be obtained for all industries, paper mill included. Under present plans, the waterway will be transformed into a modern automobile highway, probably to be used largely for freight purposes.

Governor Donahey while neither approving or condemning the Miami Valley canal bill, vetoed the F. W. K. Tom bill providing for the abandonment for canal and hydraulic purposes of that portion of the Miami & Erie canal in Lucas county lying between the point just south of the Maumee side-cut canal and the intersection of the canal with the Maumee river in Providence township. This section of the canal is in the extreme northern section of Ohio.

Chicago Paper Trade Anticipates Better Business

Market Generally Remains Stable, Despite Spring Slump, With No Indication of Any Break in Near Future—Kraft Wrapping Paper, Enameled Book, and Higher Grades of Writing Paper and Board in Good Request—Over-Production Reports

[FROM OUR REGULAR CORRESPONDENT]

CHICAGO, Ill., May 2, 1927.—The last week in April finds paper men hoping confidently that May will bring a long looked for increase in business. At the present time one finds some paper men willing to talk pessimistically about the future. The majority are taking a very optimistic viewpoint with the belief that the greater part of the reports about slow business is in the minds of those who say it is slow. One of the most important and well known executives of a large Chicago jobbing house is quoted as saying that "business is steady and the volume is there. The greatest danger lies in the fact that some paper merchants persist in talking about the business trend until they may eventually bring about just what they are afraid of."

There is no cause for pessimism in the Chicago market aside from the fact that a spring slump is in evidence in nearly every line, including the mercantile establishments of the city. The market is stable and the past week has given no indication of any break. It is true that no product is making any special mark as far as volume is concerned with the probable exception of kraft wrapping paper, enameled book and the higher grades of writing paper and board.

Constant overproduction in every line is making the market slow but firm due to the fact that no one feels like instigating any market changes while there is plenty of the product under discussion on hand. The "sit tight" method is the result.

A slight drop in the demand for sulphite bond has been reported while the bag market is quoted as experiencing a decided slump. Mills seem to be able to give instant service on news print, cheap writing grades, coated papers and most of the lines, signifying that demand for nearly every line is not strong.

There has been some speculation in Chicago as to the effect of the Mississippi floods on Southern kraft. It is believed by the majority of the kraft dealers that, although the pulp supply may be somewhat curtailed, the mills will have enough surplus on hand to tide them over until the results of the flood have passed. No noticeable curtailment of production is expected.

Western Paper Merchants Meet

The Western Paper Merchants Association met in Chicago, April 28, at the Union League Club, with about 25 member representatives present. George Johnston, Western Paper Company, of Omaha, president of the association, presided over the meeting. One of the primary motives of the meeting was to elect new members and the Badger Paper Company, Yankee Paper Company and Sawyer Paper Company were thus honored. A number of out of town visitors attended the meeting, including George Custer of the Nackie Paper Company, Milwaukee, and Mr. Marshall, of the Marshall Paper Company, Appleton, Wis.

Schoenbucher Visits Pacific Coast

The meeting of the Pacific Coast Paper Merchants Association to be held at Del Monte, California, next month, is the subject of much interest among Chicago paper men. As far as can be ascertained only two representatives from Chicago will be on hand for the meeting. N. A. Schoenbucher, secretary of the Wrapping Paper Division of the National Paper Trade Association, left April 28 for the Pacific Coast accompanied by his wife and son. Mr. Schoenbucher's family came to Chicago a week ago and the new secretary has established his home at the Edgewater Beach Hotel. Mr. Schoenbucher will be gone for about a month and, aside from attending the convention, will visit the major cities of the Pacific coast in the interests of the Association. The only other Chicago representative will be Noble Gillette, of the Chicago Paper Company, according to the latest reports.

Gustav Asplund Here

Gustav Asplund, formerly general manager of a large kraft mill in Sweden, his native country, and now attached to the staff of the Swedish Consulate in New York City, was in Chicago one day of last week and visited with several kraft mill representatives here.

New Moser Line Going Strong

The Moser Paper Company is experiencing a great deal of success in its new line known as "Direct Sales" coated bond. This line was added a little over a week ago and is specially adapted to direct mail campaigns. The paper is coated on one side with either white or colored coating and makes an attractive four page letter head, well adapted to the use of half-tones. The Moser salesmen are recommending its use at this time for spring direct mail campaigns laying special stress on the green coating on white bond as an attractive seasonal display. The paper is made by the Appleton Coated Paper Company, of Appleton, Wis.

Reynolds Addresses Salesmen

The regular Monday meeting of the Chicago Division of the Salesmens Association of the Paper Industry, held at the Hamilton Club, was addressed by H. H. Reynolds, of the B. D. Rising Paper Company, Housatonic, Mass. Mr. Reynolds gave a very interesting talk on the growth of American cities and the comparative value of printed matter.

An Ideal House Organ

Mention has been heretofore given the "Bookanwrap," house organ of the Pilcher-Hamilton Paper Company, Chicago, but the latest news concerning that interesting booklet is contained in the fact that it is now in demand in foreign countries. Henry Borchardt, more commonly known as "Hank," sales manager of Pilcher-Hamilton and editor of the "Bookanwrap," reports that A. H. Fleming, of 26 Ludgate Hill, London, England, has written him for a copy of the publication. Mr. Fleming is a paper makers' agent and merchant. The "Bookanwrap" is well edited and merits such recognition. It is filled with interesting bits of philosophy and sound advice to paper men and is singularly free from a great quantity of house advertising that sometimes characterizes such publications. The "Bookanwrap" also prints some of the poems written by Edgar A. Hall, Jr., who styles himself the "Dreamer of Dearborn Street."

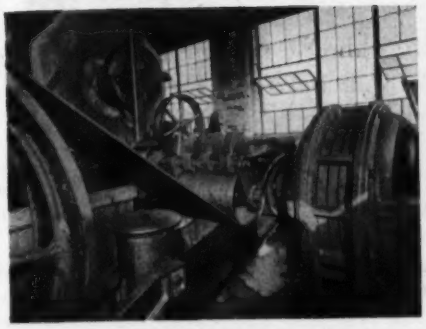
George Goodsir Honored

George Goodsir has been elected vice-president and director of the Mid-States Gummed Paper Company, of Chicago and will have charge of the eastern activities of that organization with headquarters in New York City. Mr. Goodsir is well known in paper circles and last year was president of the National Association of Gummed Tape Manufacturers. He recently resigned as vice-president and director of the McLauren-Jones Company, of Brookfield, Mass., after 25 years of service with that firm.

E. B. Babel with Marquette Organization

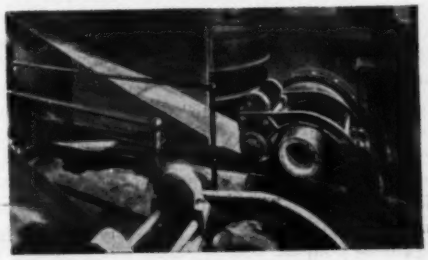
Edward B. Babel, formerly with the Chicago office of the Seaman Paper Company, is now actively engaged as vice-president in charge of sales of the Marquette Paper Company, with offices in the Transportation Building, 608 S. Dearborn. Mr. Babel

(*Continued on page 40*)



A 75 H.P. Pulmax Beater Drive running on 8 ft. centers with a 20 inch belt. This Pulmax Drive is one of six replacing chain drives.

A difficult installation on a breaker beater. With this 100 H.P. Pulmax a second-hand belt was used. It is still giving excellent satisfaction after months of service. Saving in belting alone paid for the Pulmax many times over.



$300.00 was saved by using higher speed, less expensive motors with these two 75 H.P. Pulmax Drives. And efficiency was materially increased.

Pulmax Beater Drives

The Bird Machine Company gladly stakes its reputation as an engineering organization on the Pulmax Drive for beaters -- and for all other pulp and paper mill drives.

Compare the Pulmax Drive with any other beater drive for efficiency, first cost, operating cost, maintenance, and floor space.

All we ask of you is to

TRY ONE PULMAX DRIVE

BIRD MACHINE COMPANY
South Walpole Massachusetts
769

BIRD MACHINERY

The Pulmax Drive

Improvements at Fox River Valley Paper Mills

New Pulp Web Cutter, Invented by Superintendent Kelly, Being Used Successfully in Northern Paper Mills—Device Effects Saving of From 25 to 30 Per Cent of Pulp on One Machine—To Be Placed on Market Shortly

[FROM OUR REGULAR CORRESPONDENT]

APPLETON, Wis., April 30, 1927.—Invention of a pulp web cutter that will result in economy of operation has been accomplished by W. A. Kelly, superintendent of the Northern Paper Mills, Green Bay, Wis. He has been granted a patent on the device and it is now in successful use in the Northern mills. In production the new device has effected a saving ranging from 25 to 30 per cent of the pulp on one machine. It is estimated that the cash saving is approximately $10,000 a year.

Mr. Kelly's patent consists of two knives attached to a revolving cylinder, and does away with the old knife arrangement and soldered ridge on the cylinder. The blades consist of alternate teeth and gaps, making a row of perforations across the web. The cylinder on which the knives are mounted travels at a slightly greater speed than the pulp web, causing the pulp web to be pushed far enough back to keep it from reuniting in the subsequent progress of the machine.

As the web comes off for delivery, the last two cylinders also operate at slightly higher speed, placing the web under tension and automatically breaking the sheets at the perforations. The new device does not tend to turn the pulp away from the cylinder, as did the soldered ridge, and is free from the defects of the knife contrivance. Manufacture of the pulp web cutter for the general market is to be started soon by the Green Bay Foundry and Machine Works, Green Bay, Wis.

Noyes Makes Educational Survey

Practically every mill employee in Green Bay will be interviewed by H. G. Noyes, state director of paper making education, in a survey which is being conducted to determine the nature of courses to be offered in evening schools next season. The vocational school at Green Bay expects to join in the statewide movement now on foot to educate apprentices and mill workers in their craft. The survey results in an accurate knowledge of what is needed in the way of training in each city.

New Unit for Neenah Paper Mill

Work is under way on an addition to the finishing room of the Neenah Paper Company, Neenah, Wis. The new unit will be 50 by 70 feet in size and will be of brick and stone.

Edgewater Plant Slightly Damaged by Fire

One dormer and a portion of the roof at the plant of the Edgewater Paper Company, Menasha, Wis., were destroyed by fire here Friday morning. Very little damage was done to the stock of paper stored in the building.

Pulpwood Shipments Delayed by Rain

Excessive rains have made it necessary for paper mills of the Fox River Valley to abandon shipment of pulp wood from the northern woods. Wood was arriving at the rate of more than sixty carloads a day but there has been a decline in the last two weeks on account of the weather. It has been impossible to haul the logs from the woods to the railroads because of the road conditions.

Kimberly-Clark Bowlers Dine

Teams of the Kimberly-Clark Company bowling league wound up their season with a dinner this week in the dining room of the Kotex Company plant. The team from the Kleenex division of the Kotex company was proclaimed the champion and was awarded a trophy. The new president of the league is George McElroy, the vice president is Clifford Hawley, and the secretary-treasurer, F. Clancy. An entertainment was given by the Sunshine club after the dinner.

R. M. Sensenbrenner Honored

R. M. Sensenbrenner, secretary to George A. Whiting, president of the George A. Whiting Paper Company, Menasha, Wis., has been elected a member of the Vocational School Board of that city. He expects to be of assistance in arranging the pulp and paper making courses followed in the evening schools.

Kotex Staff Changes

John Barnett of the Kotex Company, Neenah, Wis., subsidiary of the Kimberly-Clark Company, has been transferred from the Neenah office to Chicago, where he has joined the sales force. His place at Neenah has been taken by Edward Spoo, who was transferred from Niagara Falls, N. Y.

CHICAGO LOOKS AHEAD

(*Continued from page 38*)

specialized in the sale of book and offset papers during his five year connection with the Seaman Paper Company.

Miscellaneous Trade Notes

Bob Butterworth, Chicago representative of the Champion Coated Paper Company, leaves May 1 for a two or three weeks' vacation in the mountains of North Carolina. His wife will accompany him. Although Mr. Butterworth will be at Asheville, not far from one of the mills of his organization, he expects to successfully overcome the temptation of going near them except for one or two short visits. Mr. Butterworth remarked before leaving that the Asheville Country Club and surrounding links were at their best at this time of year. That statement is probably the prelude to many rounds of golf for Bob Butterworth.

S. B. Gaines, of the Irwin Paper Company, Quincy, Ill., was in Chicago last week en route east on business.

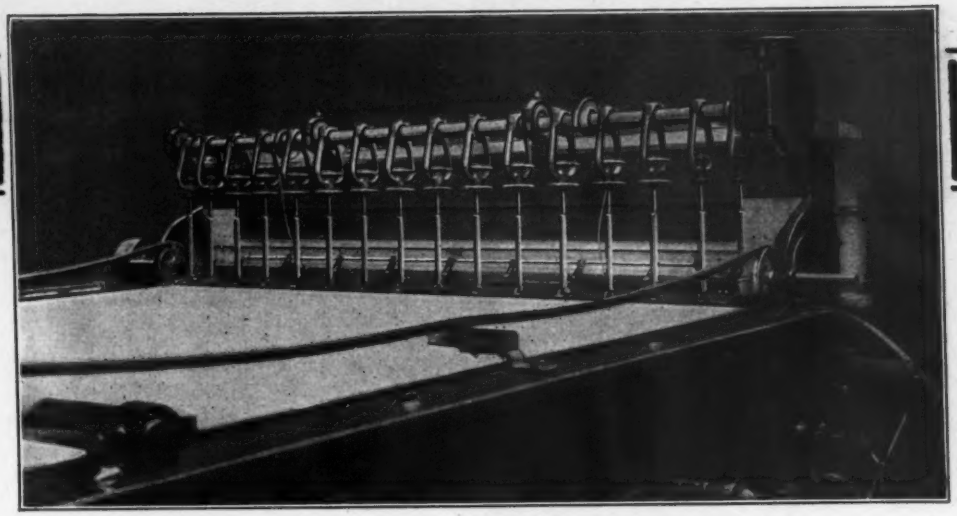
C. B. Lindstrom, of the Paper Mills Company, Chicago, left last week for a short business trip in the Eastern states.

Edward C. Burger, Chicago representative of the Schmidt and Ault Paper Company and the Lockport Paper Company, has moved his office from room 1708 in the Conway Building to room 1566 and is now established in his new location. It is reported that the Chicago offices of the Peshtigo Paper Company, shared with Mr. Burger and in charge of P. H. Bull, are to be discontinued May 1. It has been reported that Mr. Bull was returning to the mills of the Peshtigo Paper Company, but Mr. Bull could not be located to verify this statement.

C. K. Higgins, former assistant secretary of the National Paper Trade Association, with offices in the Conway Building, Chicago, and now Chicago representative of Fibreen, a building paper manufactured by the American Re-inforced Paper Company, has moved his offices to the new Builders Building on Wacker Drive. By the first of the week he will be located in room 2064.

Albany Perforated Net Up

Consolidated net earnings of the Albany Perforated Wrapping Paper Company and the A. P. W. Pulp and Power Company, Ltd., from December 18, 1926 to March 12 last, amounted to $91,039. equivalent to 70 cents a share on the common stock, against $74,395 or 52 cents a share for the corresponding period of the previous year.



Ordinary Slices.... Faulty Paper Invest in a Voith Inlet

It was always a problem to produce a continuous web of quality paper with the old fashioned slices. Unless great care was taken, the result would be faulty paper—paper having defects: such as, poor formation, uneven caliper, thin edges, water streaks, lumps and foam spots.

Today's machine speeds and paper widths multiply the problems that have been associated with inadequate stock control methods. Quality and production are hampered because of the difficulty encountered in feeding a smooth continuous stream of stock over the entire width of the wire at higher speeds.

Now it is imperative that added attention be given to the proper control of stock on faster machines and wider wires to prevent the sacrificing of paper quality. The Voith Inlet was developed to meet these new paper making requirements. This appliance facilitates proper control and accurate adjustment of the stock as it is fed to the machine. Over 100 paper manufacturers approve the Voith Inlet method which gives you better paper at a lower cost. One hundred repeat orders—two hundred installations accentuate its value to the industry.

Let us show why the Inlet is an investment rather than a purchase. A booklet giving full information about the Voith Inlet will be sent on request. Write today.

VALLEY IRON WORKS CO.

APPLETON, WISCONSIN

New York Office: 350 Madison Avenue

Demand For Paper Improves in Toronto

Coating Paper Mills Busier and Other Plants Operating Quite Actively—Inauguration of Thousand Sheet Count Postponed for Month—Annual Report Shows Great Development of Pulp and Paper Industry in Ontario Province

[FROM OUR REGULAR CORRESPONDENT]

TORONTO, Ont., May 2, 1927.—Business in the paper line picked up considerably during the past week owing to fine weather and the passing of the Easter holiday period. The past month was somewhat disappointing in turnover for the first fortnight but trade improved during the last few days, which resulted in rounding out a very good April. Coating paper mills have been getting busier and other plants are quite active at the present time. For the first four months of this year jobbers report the total turnover to be about ten per cent ahead of the corresponding period of 1926.

Business in the counter check book line is on a better basis and from 20 to 25 per cent. more is being obtained for the goods than was the case not many months ago. The change following three years of bad business and price-cutting is a welcome one and conditions are now pretty nearly normal.

The shipping tag situation is getting better and a new state of affairs has resulted in a bigger trade all around. Firms are buying in larger quantities and it is noticeable that there is a definite tendency for Canadian houses to purchase from domestic manufacturers. In the past there was a disposition on the part of some concerns to buy from foreign sources and pay a less price for a cheaper article, but home buyers are now procuring their supplies on the Made-in-Canada idea. The influence of American tags on the local market situation seems to have been stemmed.

The Thousand Sheet Count

This month was to have witnessed the inauguration in the wholesale paper line of the abolition of the "long price list" which has been in vogue for a couple of years and also the adoption of the thousand sheet count. The changes have been postponed for one month and will start on June 1 instead of May 1 as originally planned. The reason is that the preliminary educational work in the trade and among customers had not been carried out, owing to delay in getting out the necessary printed matter, particularly in discarding the ream as a basis of count and weight. Delaying matters a month has been brought about by joint action of the Toronto Typothetae, the Canadian Pulp and Paper Association, and the Canadian Paper Trade Association.

At a recent meeting of the Toronto Typothetae, the following resolution was adopted—That in view of the fact that the one thousand sheet count is likely to be brought into effect, the executive committee of the Typothetae goes on record as strongly opposed to any change being made in the broken package plan, which would result in increasing the charge over that of the present charge.

Ontario's Rapid Advance as Paper Province

The annual report of the Minister of Lands and Forests for the province of Ontario for the year ending 31st October, 1926, has just been issued and is full of much valuable information. In reference to pulp wood operations, the report says:—

"While timber operators found it necessary to restrict their cut, the pulpwood dealers and a number of limit holders increased their cordage over the previous year by 50 per cent., this increase assisting very materially in counteracting the adverse effect of reduced operations in other lines.

"The pulp wood industry, with its pulp and news print production, has done much towards improving international trade balances and giving a stability to Ontario commercial development. From now on the demand for pulp wood for home consumption must necessarily grow. The extension to present plants and the proposal for additional ones are vitalizing factors in maintaining the market for the settler and the small pulp wood limit holder, while the clear-cut policy of the Government, as indicated in new agreements to regularly allocate the areas and designate the size and type of timber to be cut, is conducive to permanency.

"Substantial additions are being made to the Fort Frances paper mills which mean doubling the output to 250 tons of paper daily.

"Important progress is being made at the head of the lakes around Port Arthur, Nipigon and Fort William, where the four outstanding firms, Provincial Paper Mills, Nipigon Corporation, Thunder Bay Company, and Fort William Paper Company, are making extensive additions, which on completion, will make this section of the most important paper-producting centres in the world.

"Under the agreements made, increases in capital investment at this point alone will total over $22,000,000; in employees over 1,300 in the mills alone and over 7,000 in the bush.

"Then, on the Transcontinental, the Spruce Falls Company have just completed a logging railway and transmission right-of-way for sixty miles from the railway north to Smoky Falls, where they propose to develop hydro-electric power to run the paper mill at Kapuskasing, the capacity of which is being increased from 115 to 550 tons of news print per diem.

"The effect of such a huge development in this new section may be gauged when it is realized that this firm, when their extensions are completed and the mill in full operation, will employ no less than 700 men in and about the mill and 3,500 in the bush.

"During the past year the Howard Smith Paper Mills at Cornwall made large additions to their mill for increased production in the highest grade of note and writing paper and a variety of other products. This mill is one of the very few mills in Ontario consuming pulp wood and the pioneer settler and the owner of poplar lots are finding a new outlet for this type of wood, the market for which has been most restricted.

"The province is fully assured of the continued expansion of the great pulp and paper industry, as the Government, in all its new agreements, has insisted on home production to the limit, every cord of our wood going into paper.

"Hand in hand with the constantly growing paper industry goes the harnessing and developing of some of the important water powers of the newer parts of the province, all of which powers remain the property of the Crown, leases covering their use amply protecting the public against monopilistic rates for municipal and individual purposes; railway tonnage is increased, the labor marked improved and a continued commercial prosperity guaranteed."

Paper Box Plant Fire Probe

Owing to the suspicious circumstances surrounding the origin of the recent fire in the plant of the Guelph Paper Box Company, Guelph, Ont., the management is likely to request a probe into the matter. The blaze, which originated in the basement and was the second to occur in the factory lately, caused considerable damage, and the officials believe that a fire bug is at work.

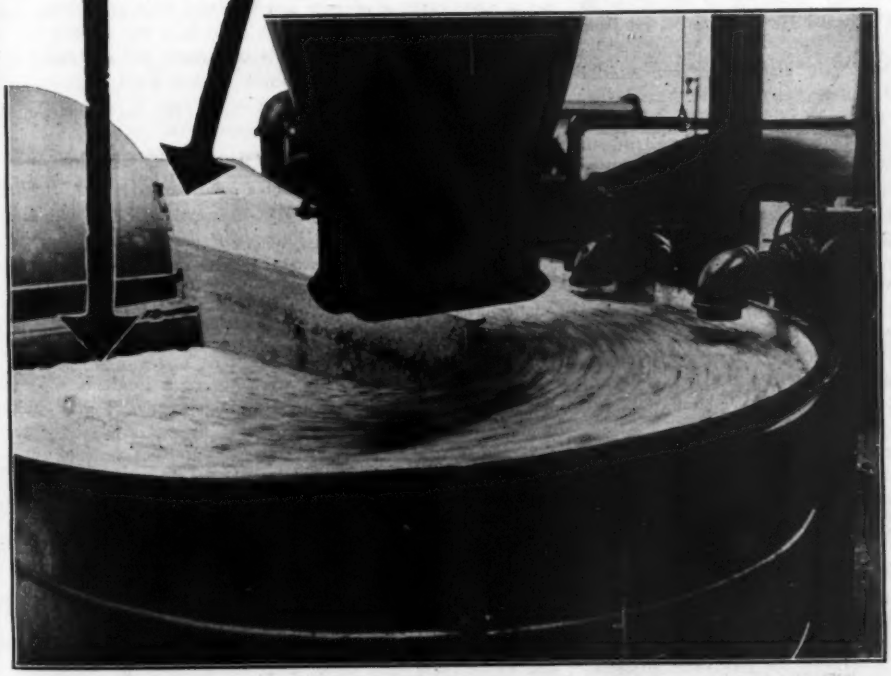
Pulpwood Drives Start Early

The pulpwood drive in the vicinity of Port Arthur, Ont., has commenced much earlier than usual this year owing to abundant water. It is estimated that 1,000 men are engaged in driving operations throughout the district, including Strawberry Creek, Budda River, Seine River and Black Sturgeon watersheds. It is stated that upwards of 50,000 cords of wood will be driven down the Sturgeon waterway alone into Black Bay.

Draft

If the stock approaching the roll in your beaters does not "drawn down" you are not getting the highest efficiency out of the power applied as the stock is "piling up" on the roll faster than it can be carried away. This causes churning action and waste of power.

Good Draft has *always* been an outstanding characteristic of the operation of Dilts Beaters.



Unretouched photograph of a 2000 pound Dilts New Type Beater charged with 3853 pounds of sulphite stock—9.57 per cent dry—circulating 17.4 feet per minute. Bottom inclined 12 inches.

38 inches of draft.

Dilts

MACHINE WORKS, Inc. FULTON, N.Y.

EXPORT OFFICE ~15 PARK ROW~ NEW YORK CITY

The Backus-Brooks Company have sent from Fort William, Ont., a large number of men who are pulp and log cutters. The men will work in the flowage area on the Seine River above the Backus-Brooks dam, where an enormous quantity of timber must be cut and taken out before June 1. The company has received instructions to have the area cleared by that date.

Notes and Jottings of the Industry

R. I. Finlay, president of the United Paper Mills, Toronto, and former president of the Canadian Paper Trade Association, accompanied by Mrs. Finlay and family, has gone to Atlantic City to spend a couple of weeks.

J. G. Gibson, T. W. Sime and T. H. Watson, of the Spanish River Pulp and Paper Mills, Toronto, were in Montreal last week attending a meeting of the directors of the company.

Fire broke out recently in the waste paper plant of Miss Rose Florence, corner of Botelier and Dalhousie streets, Ottawa, and did considerable damage before being extinguished.

A. D. Shoup, of New York, head of the A. D. Shoup Company, paper box manufacturers, was in Toronto recently on a visit to the local establishment.

E. S. Munroe, of Wilson, Munroe Company, wholesale paper dealers, Toronto, who is treasurer of the Canadian Paper Trade Association and has been spending the past few months in St. Petersburg, Florida, has returned home.

At a recent meeting of the Toronto Carton Council, arrangements were made for sending a big delegation to Chicago on May 18 and 19 to attend the annual convention of the National Paper Box Makers Association. The annual gathering of the trade in Canada will be held at the King Edward Hotel, Toronto, on June 20 and 21 next.

William Ellis has been appointed mill manager of the Abitibi Fiber Company, Smooth Rock Falls, succeeding S. R. Armstrong, of Caledonia, N. Y., who recently resigned. Mr. Ellis has been connected with the company for some years as superintendent. The accounting and executive office in Toronto is being removed to Smooth Rock Falls and E. R. Gossett, J. J. Shea and J. M. Rowland of the staff are taking up their residence in the northern town. Colonel Mills, purchasing agent of the company, may remain in Toronto.

The Interlake Tissue Mills, Merritton, Ont., has solved the water problem by entering into a new agreement with the town and installing its own filtration plant which will ensure an abundance of pure water. Some of the other plants in the Niagara district are not so well situated and anticipate trouble in the matter of pure water supply when dredging operations on the Welland canal are resumed.

H. B. Donovan, sales manager of the Canada Paper Company, Toronto, spent the past week in Montreal on business.

George Davidson, sales manager of the Howard Smith Paper Company, Montreal, and H. C. Woods, general manager of Warwick Bros. & Rutter, manufacturing stationers, Toronto, are leaving on extended business trips to Great Britain.

C. Howard Smith, Jr., secretary-treasurer of the Howard Smith Paper Mills, Montreal, was in Toronto lately spending some time with C. E. F. French, of the Toronto office.

A conference was held recently between the publishers of business, technical, trade and farm papers and representatives of the various paper mills of Canada, with a view to arranging for two or three lines of paper to be used in their publications, so as to take advantage of longer runs and thus lessen the price.

The Typothetae Sales Club, of Toronto, held its first summer monthly meeting at the Prince George Hotel recently at which a number of paper-house representatives were present. A. J. Felton spoke on the subject of "The Art of Salesmanship," and A. L. Lewis on "The Marketing Programme of the United Typothetae of America."

A new regulation was recently issued by the Department of Customs and Excise, Ottawa, under which all printers doing a business of more than $3,000 per year will be liable for payment of sales tax on their sales from now on. Under the old regulation, which is being replaced, printers doing a business of more than $10,000 per year only were liable to a sales tax on their sales.

Leo Charles, managing-director of the Victoria Paper and Twine Company, Toronto, spent a few days in Ottawa on business.

R. T. Thomas, of the Detroit Sulphite Pulp and Paper Company, Detroit, Mich., spent a few days in Toronto lately calling upon the trade.

H. A. Goldsbrough, of the Hodge-Sheriff Paper Company, Toronto, is on an extended business trip throughout the prairie province as far as the Coast.

Mrs. Herd, treasurer of Paper Sales Ltd., Toronto, returned recently after spending a pleasant holiday in Washington and other points.

Charles F. Mansell, veteran paper salesman of the Howard Smith Paper Mills, Toronto, accompanied by his sister, sails on May 13 for England where he will visit the scenes of his youth around London and Yorkshire, which he left fifty years ago and has not seen since. Mr. Mansell, who is now in his 80th year, is very active and enjoying splendid health. Many friends will wish him a very pleasant voyage.

T. L. Crossley, of Toronto, vice-president of the industrial Laboratories, recently delivered an interesting, illustrated address before the Engineering Institute of Canada at Windsor, on "The Manufacture of Modern News Print Paper."

Word received from Sault Ste Marie, Ont., states that the Northern Paper Mills, Ltd., of Wisconsin, are making arrangements to get a large expanse of pulp wood around Mile 198 on the Algoma Central Railway, and as a result there is a big demand for pulpwood cutters. It is expected that operations will be carried on until next winter in charge of Victor Lyons, local representative of the Northern Paper Mills.

Edward P. Bagg Gives $100 Checks

[FROM OUR REGULAR CORRESPONDENT]

HOLYOKE, Mass., May 3, 1927.—Edward P. Bagg who is president and treasurer of the Parsons Paper Company, and who is now celebrating his 50th year of connection with that company, signalized this anniversary the past week in a novel manner by enclosing a check for $100 in the pay envelope of each of the 250 employees. With it went a card headed "Golden Anniversary Greetings" and read as follows:

Enclosed find check for your share of a fund given by me to the employees of the Parsons Paper Company. I make this personal gift in appreciation of the many years we have worked together for the success of the Parsons Paper Company. It seems fitting that this distribution be made on the occasion of my 50th anniversary with the Parsons Paper Company. Please accept same with my best wishes.

Mr. Bagg put aside some $25,000 some years ago for this fund which has increased since that time. There is left yet a considerable sum which Mr. Bagg has set aside as a permanent trust fund for the sick and disabled men and women in his employ. A sum of money was also given to the department heads and executives; and those who had joined the force the past year were also not forgotten.

Mr. Bagg's father, the late Col. Aaron Bagg of West Springfield, was one of the founders of the Parsons Paper Company, being associated at that time with J. C. Parsons who was agent and treasurer, and John S. McElwain was secretary. This was the first paper mill to be built in Holyoke and was located near the site of the present Parsons Division of the American Writing Paper Company. In 1888 the company built the No. 2 mill, so-called, and when they sold out their No. 1 mill in 1899 to the American Writing Paper Company they retained the No. 2 mill which had been enlarged considerably since that time and is the Parsons Paper Company of today.

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DU PONT BRILLIANT CROCEIN FL
PONTAMINE FAST YELLOW 4GL

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Samples and information on request.

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232 W. First St.

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8 Thomas St.

Providence, R. I.
709 Hospital Trust Bldg.

San Francisco, Cal.
569 Mission St.

Business Generally Dull in Boston Paper Mart

Trading Adversely Affected by Slackness in Textile and Leather Industries—Some Plants Reported To Be Operating at Only 60 Per Cent Capacity—Observers Ascribe Condition of Market to Over-Production and Under-Consumption

[FROM OUR REGULAR CORRESPONDENT]

BOSTON, Mass., May 2, 1927.—Conditions in the paper market here are generally rather dull and disappointing, spotty at best. In some quarters it is reported that business is not even spotty, but in others that it is fair. Whatever sales take place are, as a rule made through hard work. The slackness in other industries, notably textile and leather, is reflected in a correspondingly quiet demand for paper. Dealers are ascribing the state of the market, as for some time, to "under-consumption," "over-production," "too much machinery," or in other words, to the "back-wash" of the war. Some plants are operating only 60 per cent of their capacity. Dealers are curtailing expenses as much as possible. Values, however, are sustained.

One of the prominent dealers in fine paper says that he does not see any liability of prices declining. He does not see how dealers can afford to sell at any lower levels except on large orders, as, for instance, several tons of book paper. Ledger and bond, all rag paper, are quotable at the same prices, with the ledger at 38 to 52½ cents f.o.b. mill, and the bond at 36½ to 65 cents.

Some Board Mills Fairly Busy

In the box board section some of the mills in New England are well occupied, especially the folding board mills. Quotations for all grades of box board are maintained at the same levels as a week ago, with the straw board rolls .009 at $57.50, chip board at $45, and binder boards at $70 to $75, all delivered New England points.

The market for old papers is practically unchanged with generally fair demand, although some report their business as rather dull. There is a good supply of mixed papers which helps to keep the prices at their present low level of $9 a ton, f.o.b. cars Boston. A similar condition applies to old newspapers which are also quoted at $9 a ton, for the minimum price. Prices, however, continue the same for all of the grades.

Domestic Rags Lower

Some of the domestic rags have declined in price and the market is expected to descend even lower. One of the prominent handlers of domestic rags states that the market cannot help going down even if sellers do not realize any profit. In new domestic rags shirt cuttings, white number 1, are quotable at 11¼ to 11½ cents compared with the previous range of 11½ to 12 cents. Fancies are quotable at 5¾ to 6 cents compared with the previous price of 6¼ cents, and washables at 4½ cents compared with 5 cents. of 6¼ cents, and washables at 4½ cents compared with 3½ to 4 cents. One reason why stock is going down is because dealers wish to realize on their property and are reported as being obliged to sell in order to take care of their overhead expense.

Foreign rags are not dropping in price in competition with the domestic rags. It is impossible to replace foreign rags at the same price as some distressed lots. Dealers cannot secure, say, 100 tons of foreign rags and sell at the same price as the domestic rags of the same grade. Declines have also taken place in old domestic rags, with the white No. 1 repacked quotable at 5 to 5¼ cents compared with a former range of 6¼ to 6½.

Thirds and blues repacked are quotable at 2.12½ to 2.37½ compared with the previous price of $2.60. The miscellaneous is at $1.75 to $1.90 compared with $1.90 to $2.15. All of the roofing rags have been sold at fractional reductions with the No. 1 now moving at $1.37½ compared to a former range of $1.60 to $1.65. The other grades are in proportion. Even a lower price than $1.37½ for No. 1 grade has been paid with a prominent customer buying domestic roofing rags at $1.30 per 100 pounds delivered. Bagging remains the same in all grades with the foreign No. 1 at $1.75 to $2, domestic at $1.75 to $1.87½ and new burlap cutting at $2.15 to 2.25.

News of the Trade

Secretary Floyd Blackman, of the New England Paper Trade Association, has received greetings for the Association from the Chamber of Commerce of Hartford, Conn., where the members are to meet May 11 and 12. A very large attendance is expected.

E. P. Bagg, president of the Parsons Paper Company, Holyoke, Mass., celebrated the 50th anniversary of his connection with the firm by giving $100 to each one of his 250 employees.

E. M. Davenport, treasurer of Spaulding & Tewksbury, accompanied by Mrs. Davenport, sailed Saturday, April 30, for a five weeks pleasure trip to England and the Continent.

Ex-Governor Roland H. Spaulding, of New Hampshire, of the Spaulding Fibre Company, Fred E. Perry of the Coy Paper Company, Claremont, N. H., and Frank Norton of the Norton Fibre Company, Henniker, N. H., were in the Boston Market recently.

Percy D. Wells has become selling agent of the well known Ticonderoga book papers.

Miami Valley Mills Help Flood Sufferers

[FROM OUR REGULAR CORRESPONDENT]

DAYTON, Ohio, May 2, 1927.—Flood sufferers in Southern states, due to the overflow of the Mississippi river, were aided substantially by Miami Valley contributors, particularly the mill interests. Not only was immediate assistance given by the manufacturers and mill owners, but the men and women employed in the industry responded instantly and whole-heartedly to the appeal for help.

In Middletown, Z. W. Ranck, president of the Civic League, which controls all organizations in the Paper City, had charge of the work. "Middletown wanted to do its share," he said, "and more, too. It was my belief we could raise the money without conducting an intensive campaign, such as suggested by the Red Cross and the Salvation Army, and we did."

Mr. Ranck, who is at the head of the Crystal Tissue Mills, pointed out that in addition to the $1,300 already sent in from the contingent fund, there were two ways open for the public to contribute, a check to Colin Gardner, of the Gardner-Harvey Paper Company, who is chairman of the Middletown Chapter of the Red Cross, or to drop contributions in the iron kettles placed at prominent street corners.

When the appeal for clothing and blankets came to this valley, the response was most liberal. The paper manufacturers of Middletown arranged for shipping 100 blankets to the refugees immediately. The Wardlow-Thomas, Gardner-Harvey, Crystal Tissue Mills, the Sorg Paper Company, and other concerns, responded immediately.

In Franklin, the Maxwell Paper Mills and the Logan & Long Mills were the first to respond, the former sending 20 blankets and the latter 22. All blankets were cut and hemmed by volunteer workers and were laundered free of charge by Franklin and Middletown laundries.

The appeal fell upon eager ears in Dayton, where people were reminded of the promises made in the attics away back in 1913, when more than half the population suffered from conditions such as prevail in the South.

Be here on May 26, 27, 28th,

ON to RICHMOND!

The Occasion ¶ Eighth Annual Convention, American Pulp & Paper Mill Superintendents Association. Hotel Jefferson, Richmond, Virginia. May 26, 27, 28th.

Work ¶ Interesting general sessions devoted to business of the association, and important addresses by outstanding men in the pulp and paper industry. Divisional meetings featured by intelligently prepared papers of practical interest and followed by man to man round table discussions.

Fun ¶ Plenty of it. Big banquets, informal luncheons, sightseeing trips and historic trips through the beautiful environs of one of America's most historic cities. Southern Hospitality and sophisticated entertainment, features for every man and every mood.

Food ¶ Food and plenty of it. Prepared in the style of Aunt Jemima, served with the grace of antebellum hostesses.

Hotels ¶ Ten of them. Five first class hostelries. Five good small hotels.

Railroads ¶ Five trunk lines enter Richmond. Eight hours from New York. Twenty-three hours from Chicago. Not "down South" but just where the South begins. Three-quarter fare if you come for the convention. (Ask for a certificate when you buy your railroad ticket.)

Eighth Annual National Convention

American Pulp & Paper Mill Superintendents Assn.

HOTEL JEFFERSON—RICHMOND, VIRGINIA

May 26, 27, 28th, 1927

For information write: Carl Magnus, General Chairman, Standard Paper Mfg. Co., Richmond, Va.

Newsprint To Be Manufactured in the South

By Richard Woods Edmonds

A process has been developed by Arthur D. Little, Inc., engineers and chemists of Cambridge, Mass., for making news print paper from gumwood and Southern pine—two of the most abundant and rapid growing of the southern woods. The new process is reported to produce a news print sheet equal in quality to that now used by newspapers throughout the country, and at an appreciable saving per ton of paper. First work on the process was undertaken several years ago and was followed by a long series of experiments and commercial tests but announcement was previously withheld pending the issue of patents and successful demonstrations. H. S. Weston, the lumber operator and capitalist of Logtown, Miss., has been associated with the Cambridge engineers throughout the development.

The significance of the announcement to the South is indicated by the following facts;

(1) While it will be many years before the supply of spruce, fir and jack pine, in Canadian and northern United States forests, available for news print manufacture, is exhausted, the enormous increase in demand for this class of paper has made it necessary for operating mills to use timber from more inaccessible areas, at greatly increased cost.

(2) Our annual consumption of news print is nearly 3,500,000 tons, with a value greater than $200,000,000.

(3) Southern gums and pines used in the new process regrow on cut-over land about four times as fast as the spruce of the North, and the South is slowly awakening to the importance of scientific forestry and reforestation of cut-over lands.

(4) There are weighty reasons, too long to enumerate why a large portion, if not indeed a major part of the $200,000,000 value of news print manufactured could be advantageously produced in the South.

The first experimental work was carried on in the laboratories of Arthur D. Little, Inc., where a complete experimental paper mill including a 30 inch Fourdrinier paper machine permitted semi-commercial scale operations. It was known that gum wood fibers do not form readily into a sheet on the paper machine, as does the spruce ground wood now universally used. By experiment it was found that the addition of small quantities of other vegetable fiber (cellulose) specially prepared, gave the desired result with the new raw material.

When the Cambridge experiments were completed successfully gum wood cut in Mississippi was shipped to a pulp mill in Maine, where it was ground and reshipped to a nearby paper mill. Semi-bleached, southern pine sulphate pulp purchased from a Southern mill was added in small amount and news print paper run off.

Several test runs were made, the paper machine operating at its usual speed. The paper so made was used in regular editions on the high speed presses of the *Boston Herald* and the *New Orleans Times-Picayune* and *Item*. Over 50,000 copies of the papers were distributed to the public in the usual manner, and with entire satisfaction to pressmen and publishers.

Accurate manufacturing cost figures have shown to the satisfaction of all concerned a considerable saving per ton over the average present cost in the North.

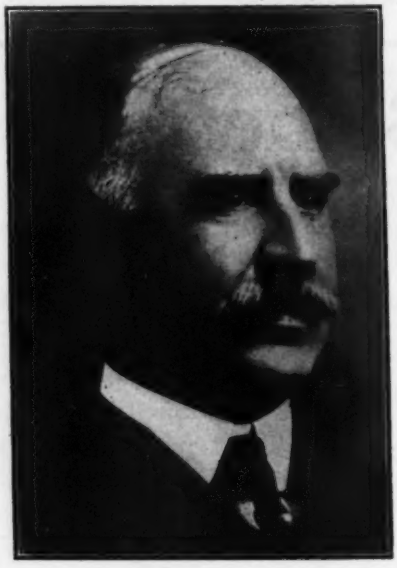
Millcraft Paper Co. Conducts Campaign

CLEVELAND, Ohio., May 2, 1927.—Millcraft Paper Company, specializing in fine papers is conducting an intensive merchandising campaign throughout the Central West and is distributing fine sample books showing the complete line of imported papers which the company carries for the Japan Paper Company. The book is leather bound and handsomely gotten up and offers to the trade a unique service which has never before been extended on this class of merchandise.

The Millcraft Paper Company carries papers in stock from Japan, China, Korea, Italy, Spain, India, France, Sweden, England, Holland, Belgium, Germany, Austria, Switzerland and Czecho-Slovakia. The stock also includes 15 different lines of imported announcements many of which are with tissue lined envelopes.

Made Directors of F. C. Huyck & Sons

Frank J. McGovern, widely and long known among the paper trade as sales representative of F. C. Huyck & Sons, Albany, N. Y., and W. W. Weed, managing director of Kenwood Mills,



FRANK J. MCGOVERN

Ltd., Arnprior, Ont., Canada, were elected to the board of directors of F. C. Huyck & Sons, Tuesday, April 12.

The election of Mr. McGovern was based on his many years of faithful service in developing the sales of Kenwood felts in the United States, Canada and Europe, and the need of using his sound judgment and knowledge of world wide sales conditions in shaping the policies of the company. The many paper making friends of Mr. McGovern will be glad to know that he will be able to give his personal attention to supplying their requirements.

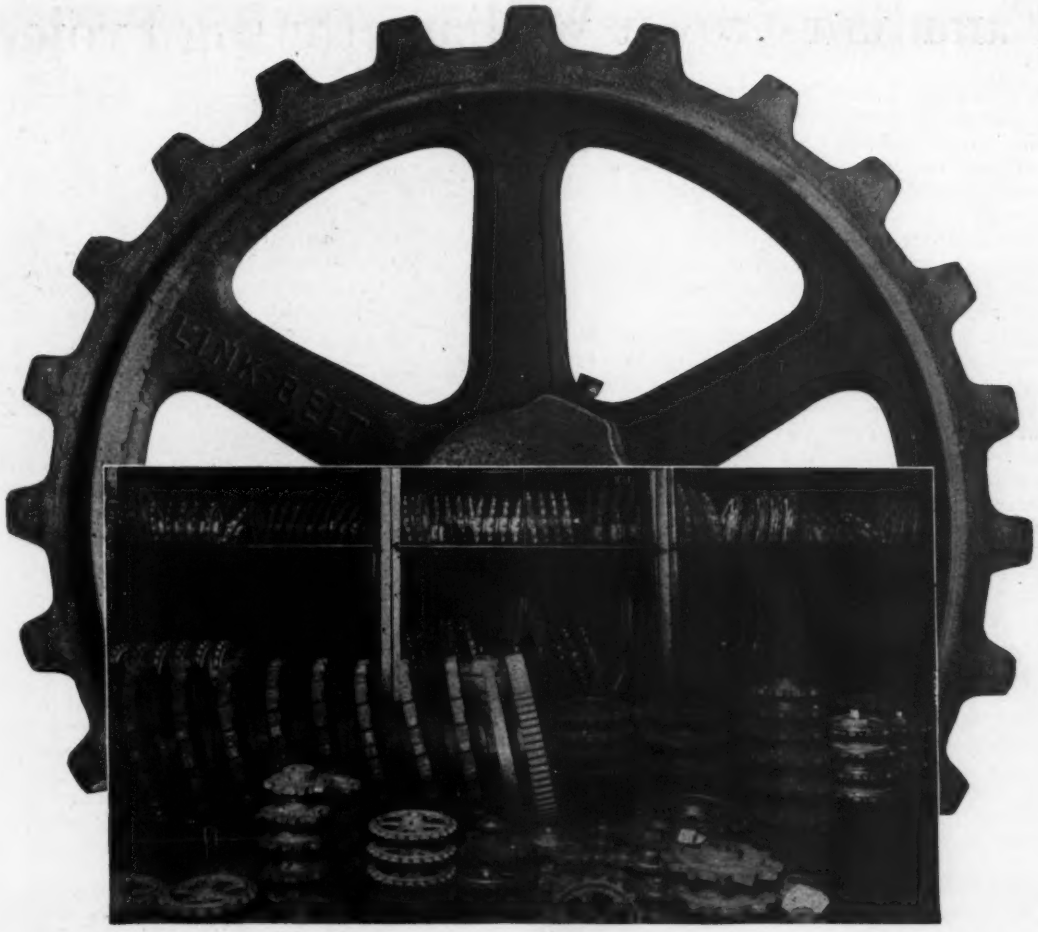
The growing importance of the Canadian paper field, and the fine success of Kenwood Mills Limited, under the management of W. W. Weed, in caring for this market, made it advisable for him to represent the Canadian interests on the board of the parent company.

This extension of the board of directors is in line with the established policy of putting the entire management in the hands of those actively engaged in the business.

Austrian Paper Production

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., May 3, 1927.—Paper production in Austria during February reached a total of 15,800 metric tons and chemical pulp 14,000 tons, according to a recent cable from Assistant Trade Commissioner Embry, at Vienna. Production during the corresponding month last year amounted to 16,100 tons for the former and 14,300 tons for the latter.



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PERFECTLY fitting sprocket wheels, designed correctly to fit chain of standard pitch are always available from complete Link-Belt stocks, at Chicago and Philadelphia, on an immediate delivery basis.

From foundry to final inspection, Link-Belt sprocket wheels are made to insure lasting service. The sprocket wheels are bored as ordered and key-seated or set-screwed as required.

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LINK-BELT SPROCKETS

Canadian-Crown Williamette Big Project

SEATTLE, Wash., April 28, 1927.—One of the biggest undertakings from an engineering point of view that has yet been attempted in the Northwest has already been initiated by reconnaisance engineers of the Canadian-Crown Willamette Company, of Vancouver, B. C.

The location of the project is on Vancouver Island, in what is generally known as the Campbell River district. Campbell river debouches into Discovery Passage, about midway the length of the island where the port and town of Campbell River is situated.

The entire district tributary to Campbell river is a most interesting one to the engineer. A major pulp and paper project such as this could not help but be. There is a potential resource of pulp timber upon which to draw in excess of fifteen billion feet, consisting mostly of hemlock and spruce. Logging for saw timber has been in progress in this district for a number of years, but at that, even the saw timber, the fir and cedar and spruce, is far from being exhausted. The area as generally understood to be embraced in the Campbell River district is more than fifty miles square and is pretty generally forested. The logging conditions of this area are fair to good, as conditions obtain on the Coast. An exhaustive study of the harvesting problems connected with this district is now under way by the Canadian-Crown Willamette Company, together with a survey of the hydroelectric power possibilities of the river.

Campbell river will furnish ideal power for the proposed immense operations of the company; it is estimated that 150,000 horsepower may be available. For rivers on Vancouver island, Campbell river has an unusually large watershed. Many of its tributaries drain into the several large lakes that are found along the entire course of the river, with Buttle lake, the largest of all, as one of its sources.

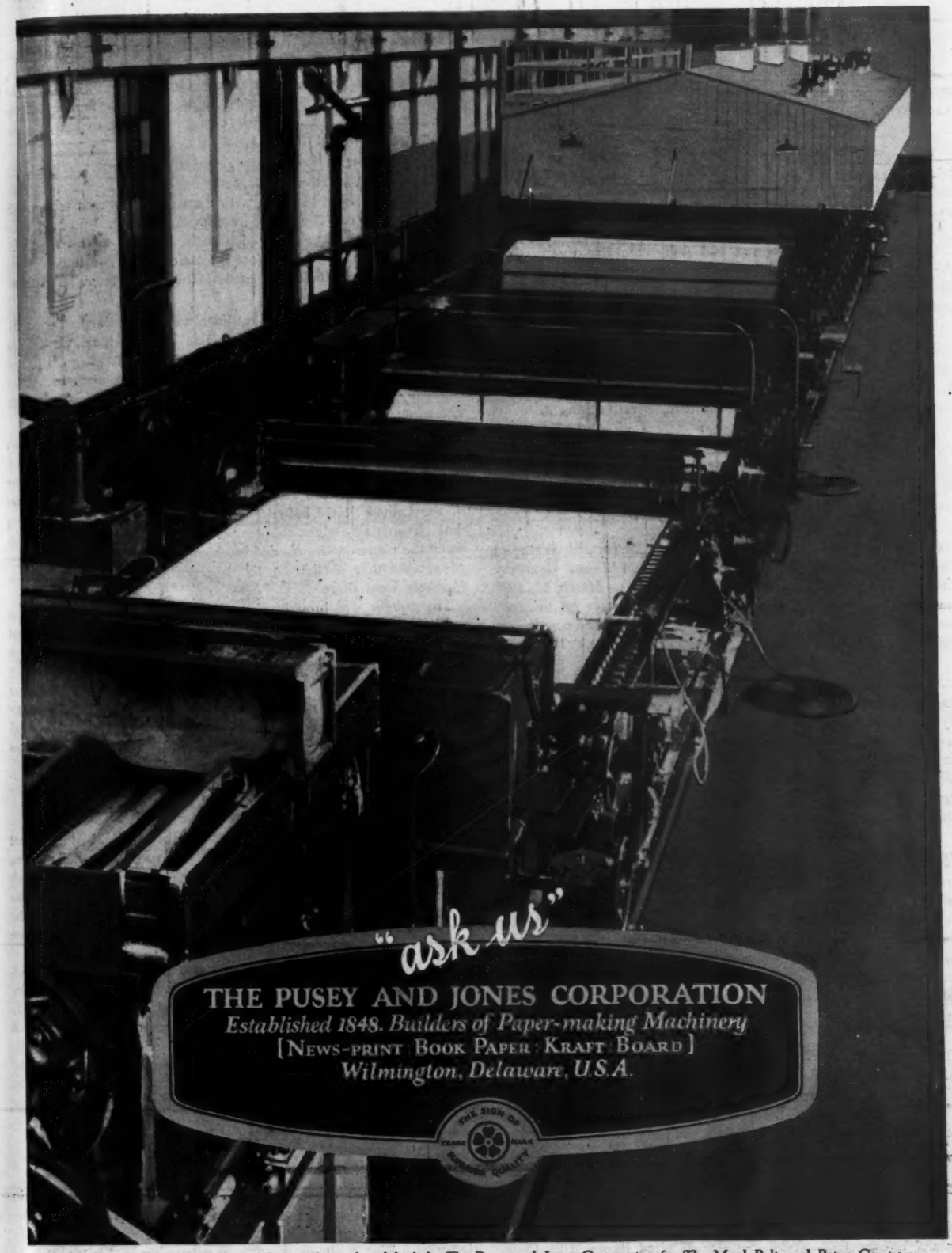
Regulation flow will be ideally worked out on Campbell River. The lakes are all excellent reservoirs for stored waters and possess natural features that make for low dam construction cost. It has not as yet been determined just where the power plant will be located, several good locations offering themselves ideally to hydro-electric utilization.

BUTTLE'S LAKE, A LARGE NATURAL STORAGE RESERVOIR

Campbell River is a port having advantages for water transportation, with the addition of a jetty or breakwater, to offset the rip of the tide that ebbs and flows rather severely through Discovery Passage. It is well protected otherwise, however; conveniently located as to distance, it is but 103 miles to Vancouver. The subsequent development of this major undertaking should be followed with interest by every one connected with the pulp and paper industry.

AN EXCELLENT DAM SITE, CAMPBELL RIVER CANYON

ELK FALLS, CAMPBELL RIVER, V. I.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Illustrating the 160-inch Book Paper Machine designed and built by The Pusey and Jones Corporation for The Mead Pulp and Paper Company, Chillicothe, Ohio . . . This is the third Puseyjones Machine built for this company and is one of four Puseyjones Book Paper Machines built in 1926.

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New York Trade Jottings

R. S. Kellogg, secretary of the News Print Service Bureau, is attending the annual meeting of the United States Chamber of Commerce, at Washington, D. C., this week.

* * *

The regular weekly luncheon meeting of the New York Division of the Salesmen's Association of the Paper Industry was held last Monday at the Canadian Club, New York, and attracted an excellent attendance.

* * *

Gus R. Holm, recently with Sol Ash, Inc., has organized the A. & H. Paper Mills Supply Company, and has opened offices at 15 Beekman street, New York, to deal in waste paper, rags and other raw materials for paper manufacturing.

* * *

The H. B. Prior Company, specialists in paper makers' chemicals, of the Graybar Building, New York, announces that Herbert R. Prior, for many years connected with the Grasselli Chemical Company, became a member of the firm, effective May 2.

* * *

Stockholders of the International Paper Company, New York, at the recent annual meeting held at Corinth, N. Y., re-elected H. C. Phipps, F. N. A. Close, A. A. Tilney, Ogden Reid and Lancing P. Reid as directors for the ensuing three years.

* * *

Consolidated net earnings of the Albany Perforated Wrapping Paper Company and the A. P. W. Pulp and Power Company, Ltd., for the period from December 18, 1926, to March 12, 1927, amounted to $91,039, equivalent to 70 cents a share on the common stock, against $74,395, or 52 cents a share for the corresponding period of the previous year.

* * *

A. B. Ayerst, pulp and paper mill engineer, of Tacoma, Wash., was among the visitors in New York during the week. Mr. Ayerst is widely experienced especially in the soda process and has been connected with numerous important pulp and paper concerns throughout the country and more recently in the Pacific Northwest. He is enthusiastic about this territory, especially as regards its wood and power resources for paper making purposes which he believes are unequalled anywhere.

* * *

Net earnings of the St. Regis Paper Company, of 49 Wall street, New York, after all charges, including depreciation and Federal taxes, amounted during 1926 to $875,454, equal, after preferred dividends, to $2.11 per share on the outstanding common stock. This figure, which does not reflect the company's undistributed proportion of the consolidated earnings of the Northwestern Power Corporation, amounting to more than $2 per share additional on the common stock, compares with $1,041,056, or $2.69 per share, in 1925.

* * *

There arrived in New York last week O. F. T. Olsen, of Taastrup, Denmark, Fellow of the American Scandinavian Foundation, who will spend the year studying American paper mill methods at the plant of the Nekoosa-Edwards Paper Company, Port Edwards, Wis. Mr. Olsen is a graduate in chemistry 1924, from the Royal Technical College, Copenhagen, and has since been working in the mills of the United Paper Mills Company, the largest paper company in Denmark. This is the company with which Dr. Sigurd Smith, internationally known for his study of beating, which is covered by his work "The Action of the Beater," is connected. While with the United Paper Mills Company, Mr. Olsen was employed at the Dalun Mills Fyen, where book and writing paper is made, also at the Silkeborg mill, where the production is fine writings, including hand made paper.

Roofing Concerns Consolidated

LOCKPORT, N. Y., May 2, 1927.—Formal announcement is made of the merger of the Lockport Paper Company of Lockport, N. Y., with the Beckman-Dawson Roofing Company of Chicago. The combination was made through exchange of stocks and the Lockport concern will become the eastern manufacturing and distributing unit of the Beckman-Dawson Company.

The Lockport Paper Company is a long-established industry of western New York, manufacturing roofing papers and other roofing materials of like type with the western concern with which it is now united. The Lockport company was incorporated more than thirty years ago and had been in business as a co-partnership a number of years before becoming a corporation. It has been continuously under the same management from its partnership days to the present.

The new combination makes it a unit of a large and well-established concern of the roofing line in the middle west. The Beckman-Dawson Roofing Company has plants at Argo, Ill., and at Detroit, Mich., and with the inclusion of the Lockport Paper Company it will be expanded into a company with a capital stock exceeding $1,000,000.

No change in contemplated in the operation of the Lockport concern and practically none in the management. Under the new combination the Lockport plant will handle the business of the new Beckman-Dawson Roofing Company for the eastern district of the United States both in the manufacturing and distribution, thus eliminating freight charges from the company's western plants, while the plants in Illinois and Michigan will handle with the same advantages that portion of the Lockport Company's business as formerly went there.

The merger was brought about through the mutual recognition of the business advantages which would come to both concerns from reduction in the cost of doing business and the elimination of competition incident to their combination. It is expected by the management that not only will the profits be increased by these factors but also that the volume of business handled by the combined plants can be materially increased. Therefore it is believed that the Lockport plant will be even more active and prosperous under the new conditions than it has been in the past.

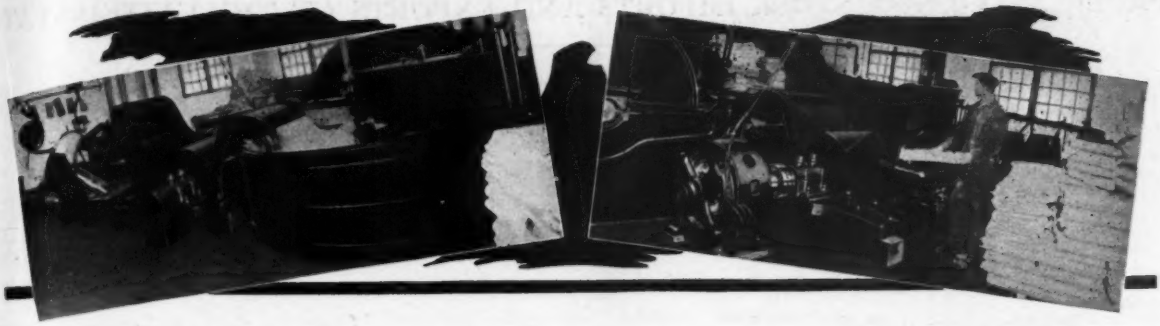
Atlantic Carton Corp. Expanding

The item in the PAPER TRADE JOURNAL of April 21 stating that "the local mill of the Atlantic Carton Company, Norwich, Conn., has been sold to a textile interest, and will be used for that branch of manufacturere in the future. It is understood that equipment in the plant will be sold," was misleading. This plant was the former factory of the Atlantic Carton Corporation which had been idle for a little over two years.

The Atlantic Carton Corporation was organized in 1926 at which time a factory was purchased in Norwich. Since this time the company has been doing business there and its business has extended over the country into Canada, and some foreign countries. The first factory was comparatively small, but several large additions were put on until 1924 when the company purchased the large factory it now occupies. The company at present occupies approximately 300,000 square feet of floor space and is at present adding to its equipment.

R. S. Wertheimer to Manage Long View Fibre Co.

PORTLAND, Ore., April 28, 1927.—R. S. Wertheimer arrived in Longview, Wash., late in April from Kaukauna, Wis., to assume active management of the Longview Fibre Company's plant in that city. The company is now constructing a $2,500,000 mill project on the Columbia river front. Mr. Wertheimer's family, consisting of his wife and two children, accompanied him to the new home.



Better than a battery of Beaters

The Carthage Pulp Shredder not only speeds up furnishing the beaters but prepares the "furnish" so efficiently that the time in the beaters is cut to one-quarter. A big saving in power is the result besides better, more uniform stuff.

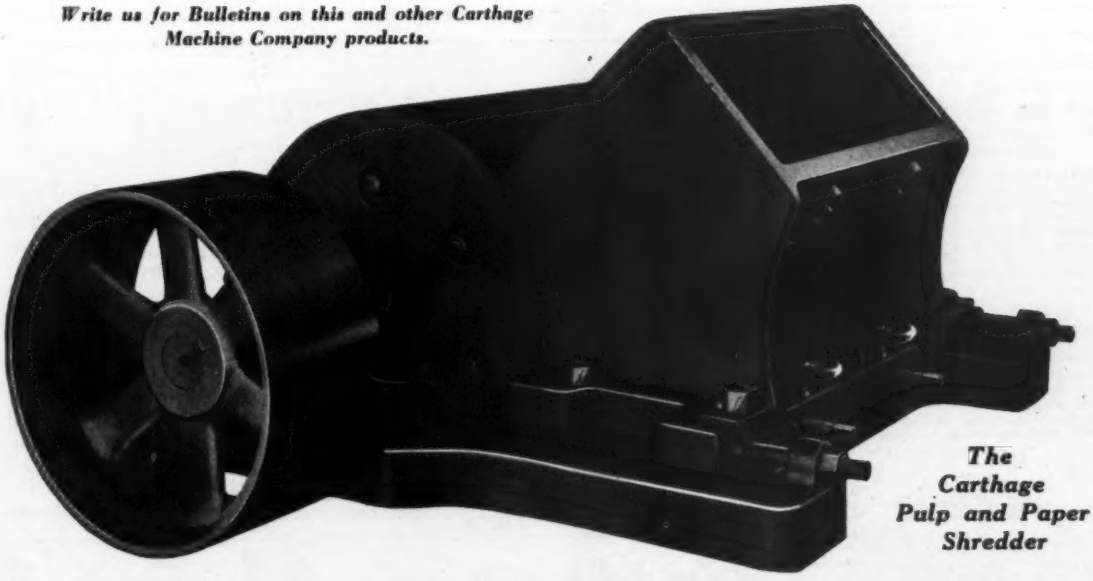
The Carthage Pulp Shredder is designed by engineers foremost in the manufacture of efficient pulp and paper mill machinery, men who are as much interested in the satisfactory operation of every Carthage Machine as in its installation.

Write us for Bulletins on this and other Carthage Machine Company products.

Carthage Machine Company products include:

Chippers	Grinders
Chip Screens	Wet Machines
Wood Washers	Knives
Barkers	Cylinder Moulds

Digester Blow-off Valves and auxiliary equipment for the wood room



The Carthage Pulp and Paper Shredder

Carthage Machine Company

Manufacturers of Pulp and Paper Mill Machinery

CARTHAGE, NEW YORK **BELLEVILLE, ONT., CANADA**

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PAPER AND PAPER STOCK IMPORTS AND EXPORTS OF THE UNITED STATES

For the Month Ending February 28, 1927 and for the Two Months Ending February 28, 1927 as Compared with Correspond ing Months of Previous Year

IMPORTS—PAPER

	February				Two Months Ending February 28			
	1926		1927		1926		1927	
	Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value
Paper and manufactures (total)	.....	$10,430,686	.....	$10,110,993	.....	$20,241,172	.....	$22,376,314
Printing paper—								
Standard news print .....lbs...free	266,438,289	9,096,148	268,418,226	8,913,970	520,344,455	17,787,545	600,622,723	19,942,942
Imported from—								
Finland	1,604,974	43,480	4,363,701	124,908	3,184,971	89,616	10,642,793	313,589
Germany	3,337,292	100,371	1,085,320	32,291	10,361,963	296,996	2,029,124	60,862
Norway	685,449	20,629	1,803,622	48,203	685,449	20,629	7,070,740	193,060
Sweden	9,361,604	287,065	9,835,908	297,579	16,135,204	496,908	25,125,555	745,286
Canada	245,088,578	8,437,086	249,677,765	8,352,302	471,541,646	16,290,805	541,142,001	18,118,658
Newfoundland and Labrador	5,809,371	188,783	1,651,910	58,687	17,884,201	573,857	14,440,152	506,272
Other countries	551,021	18,734	.....	.....	551,021	18,734	172,358	5,215
All other, n. e. s.....lbs...dut.	1,037,712	52,872	900,329	43,499	1,853,782	94,261	1,810,545	88,864
Grease-proof and water-proof papers..lbs...dut.	150,541	29,077	164,990	26,073	257,654	44,122	325,165	57,994
Kraft wrapping paper .....lbs...dut.	952,120	40,190	718,747	32,993	1,796,485	75,814	1,078,398	49,758
All other wrapping paper.....lbs...dut.	536,120	31,691	571,670	27,161	791,130	47,001	1,132,525	48,378
Writing, drawing, bond, etc.....lbs...dut.	288,271	56,883	164,590	41,616	598,806	116,456	365,633	89,746
Surface coated .....lbs...dut.	116,008	44,415	143,140	52,090	279,061	111,019	345,827	123,465
Tissue paper .....lbs...dut.	298,499	129,468	265,580	152,112	496,902	214,944	501,020	276,954
Pulp boards in rolls .....lbs...dut.	6,881,057	173,658	4,602,364	113,002	12,684,494	313,273	8,009,945	197,630
Other paper boards, n. e. s.....lbs...dut.	.....	45,652	.....	74,921	.....	104,719	.....	168,370
Cigarette paper, cigarette books and covers .....lbs...dut.	814,629	216,548	761,182	205,879	1,320,879	369,268	1,410,816	420,654
Hanging paper .....lbs...dut.	300,216	63,992	327,814	69,406	578,089	126,836	585,395	143,587
Paper boxes .....lbs...dut.	157,112	87,434	177,764	112,910	307,840	162,046	343,292	212,087
Pulp or papier-mâché and manufactures of, n. e. s. .....lbs...dut.	437,063	61,869	239,467	32,802	670,184	95,149	574,775	93,219
Duplex decalcomania, not printed.....lbs...free	67,302	17,088	40,539	9,890	101,129	25,738	103,486	25,279
All other .....dut.	.....	283,701	.....	202,669	.....	552,981	.....	437,387

WOOD PULP

Mechanically ground wood pulp.....ton..free	20,441	588,527	11,360	356,553	43,109	1,237,181	27,769	808,085
Sulphite wood pulp.....ton..free	61,096	4,099,691	61,992	4,007,015	151,997	9,824,747	157,982	10,265,398
Sulphite pulp, unbleached .....ton..free	41,466	2,433,722	45,619	2,690,850	106,471	6,093,392	112,917	6,670,195
Sulphite pulp, bleached .....ton..free	19,630	1,665,969	16,373	1,316,165	45,526	3,731,355	45,065	3,595,203
Imported from—								
Finland	.....	.....	6,179	357,028	5,591	272,323	12,182	686,898
Germany	4,438	299,701	3,731	285,591	11,690	776,143	10,441	750,971
Norway	4,827	373,426	6,634	476,608	11,246	882,742	11,247	863,028
Sweden	18,383	1,135,908	23,491	1,435,719	52,166	3,152,198	66,668	4,108,565
Canada	32,095	2,207,618	17,721	1,192,102	63,171	4,301,944	51,162	3,460,022
Other countries	1,353	83,038	4,236	259,967	8,133	439,397	6,282	395,914
Sulphate wood pulp, unbleached (Kraft pulp) .....ton..free	27,295	1,750,856	16,300	1,010,336	46,133	2,915,970	53,012	3,328,481
Imported from—								
Finland	154	8,297	356	19,258	1,804	100,917	946	53,232
Norway	1,029	66,337	535	33,021	1,198	77,201	1,571	95,668
Sweden	12,718	785,847	5,997	354,521	18,801	1,147,279	29,961	1,841,313
Canada	13,275	884,429	9,340	599,414	23,673	1,558,091	20,304	1,323,465
Other countries	119	5,946	72	4,122	657	32,482	230	14,803
Sulphate pulp, bleached .....ton..free	844	52,405	1,763	105,243	3,423	233,738	6,190	407,054
Other pulp .....ton..free	139	6,820	59	9,379	177	9,996	537	35,395

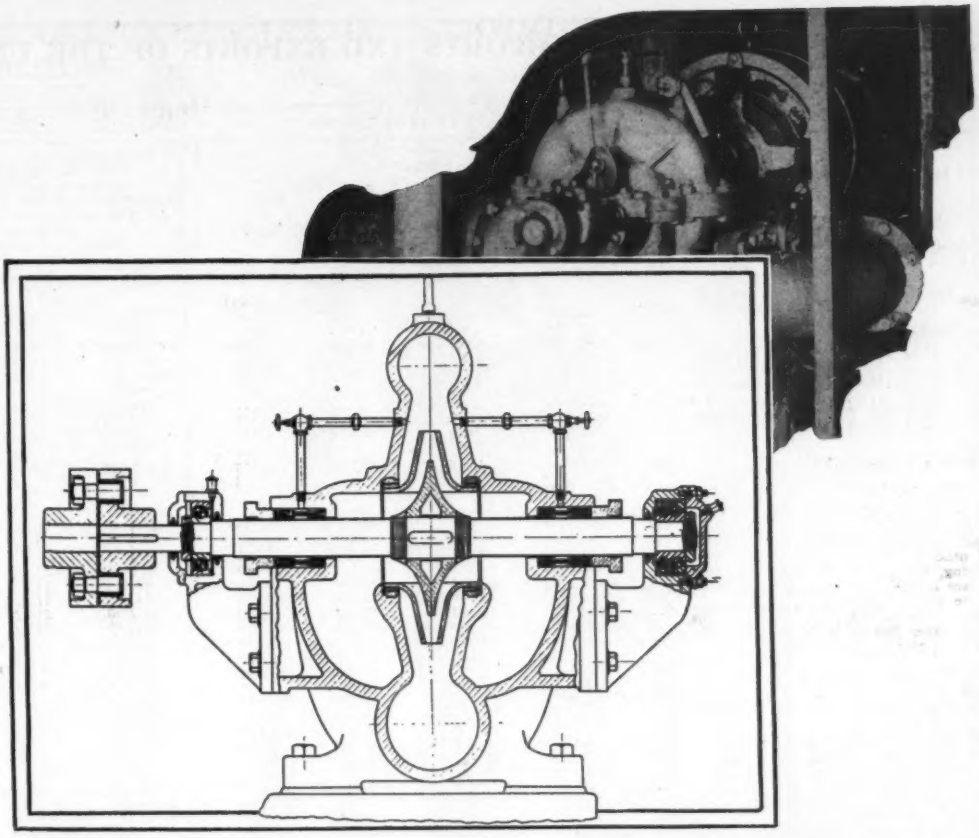
CRUDE PAPER STOCK

Rags for paper stock .....lbs...free	34,171,445	851,183	27,744,331	617,708	76,074,010	1,959,993	61,273,159	1,344,084
Waste bagging, waste paper, etc.....lbs...free	9,644,563	181,159	5,286,019	76,507	19,749,536	393,632	12,219,046	181,830
Old rope and all other paper stock...lbs...free	5,993,781	340,615	2,950,891	96,462	11,706,818	614,737	8,813,442	244,273

CHEMICALS AND OTHER PAPER MAKERS' MATERIALS

Colors, dyes, stains, color acids, and color bases, n. e. s. .....lbs...dut.	365,017	406,483	926,711	996,162	842,871	979,636	1,442,840	1,639,694
Imported from—								
Belgium	9,691	15,316	23,805	33,544	37,568	61,392	45,733	71,472
France	36,012	43,181	5,402	8,179	65,130	81,722	19,495	27,682
Germany	156,423	152,035	561,072	555,350	386,139	430,289	908,338	973,993
Italy	11,363	11,806	8,115	6,792	16,230	16,752	13,817	12,346
Switzerland	134,908	164,140	293,954	359,162	300,816	342,780	399,644	495,312
United Kingdom	13,517	14,511	16,856	17,192	25,834	26,856	31,443	33,276
Other countries	3,103	5,494	17,507	15,943	11,154	19,845	24,370	25,613
Casein or lacturene .....lbs...dut.	1,800,395	158,025	2,043,008	240,833	3,045,395	270,200	5,524,695	640,097
Kaolin, china, and paper clay.....ton...dut.	17,300	174,270	22,246	216,541	41,595	416,560	50,696	511,489

(*Continued on page 56*)



New Departures the Foes of Wear and Tear

The first step in modernization is to eliminate all old-fashioned devices which may cause trouble or interruption of production. Wherever a shaft revolves or a wheel turns, New Departure Ball Bearings banish the evils of friction and wear—and what is even more important, keep things running smoothly, constantly and with a minimum of attention.

The centrifugal pump is only one of the many devices whose operation is improved by New Departures. Technical application bulletins to industrial machinery and engineering consultation service upon request.

THE NEW DEPARTURE MANUFACTURING COMPANY

Detroit ***Bristol, Connecticut*** **Chicago**

The Pump Illustrated

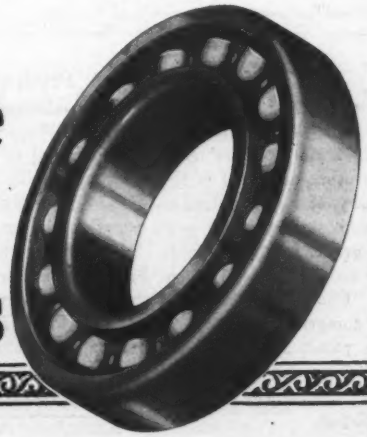
The pump illustrated is of the single stage high speed centrifugal type. With plain sleeve bearings the stuffing boxes were subjected to considerable load and loosened up, wearing out the packing rapidly.

New Departures were substituted in special "outboard" housings out of reach of moisture.

Now the shaft runs smoothly on permanently true centers and may be packed with lubricant for extended periods of operation.

It is advisable that all redesigning be done with the co-operation of New Departure engineers. Specific recommendations and finished drawings furnished without cost to you.

New Departure Quality Ball Bearings



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PAPER AND PAPER STOCK IMPORTS AND EXPORTS OF THE UNITED STATES

(*Continued from page 54*)

EXPORTS—PAPER

PAPER AND MANUFACTURES OF	February 1926 Quantity	February 1926 Value	February 1927 Quantity	February 1927 Value	Two Months Ending February 28 1926 Quantity	Two Months Ending February 28 1926 Value	Two Months Ending February 28 1927 Quantity	Two Months Ending February 28 1927 Value
Paper and manufactures (total)	.....	$2,078,233	.....	$2,134,522	.....	$4,214,125	.....	$4,258,204
Printing paper—								
News print paper ....lbs.	2,830,646	131,644	1,748,081	83,110	7,800,707	363,246	4,467,694	205,071
Exported to—								
Canada	14,847	840	148,446	10,347	45,401	4,099	215,892	15,374
Central America	90,537	4,467	55,530	2,547	223,568	10,244	109,821	5,421
Mexico	71,444	4,663	43,442	2,251	131,812	7,969	85,833	4,564
Cuba	385,745	16,530	93,426	4,525	1,803,879	74,567	402,099	18,980
South America	774,803	35,948	733,676	31,109	1,641,278	78,166	1,509,251	63,220
China, Hongkong and Kwantung	565,326	29,705	5,256	640	1,988,926	97,218	193,120	14,311
Japan	256,436	10,601	.....	.....	588,536	25,736	21,955	932
Philippine Islands	491,888	21,115	540,621	23,571	981,313	42,632	1,738,997	70,701
Other countries	179,620	7,775	127,690	8,120	395,994	22,615	190,726	11,568
Book paper, not coated ....lbs.	1,013,089	108,205	1,377,969	118,733	2,314,051	228,221	3,022,715	245,314
Exported to—								
United Kingdom	9,000	1,498	.....	.....	16,322	2,600	430	115
Canada	233,256	25,625	299,447	23,930	423,360	46,501	639,639	52,907
Central America	43,950	4,404	35,930	3,064	118,963	11,392	71,897	6,960
Mexico	71,521	9,295	23,876	2,341	277,655	27,617	87,558	9,774
Cuba	132,243	14,991	99,514	10,619	251,904	25,361	342,249	29,424
Argentina	25,714	2,515	101,777	7,605	47,111	5,192	182,022	14,345
Other South America	96,434	12,749	203,398	20,893	255,240	27,810	797,041	54,941
China, Hongkong and Kwantung	160,936	13,193	173,248	13,902	407,583	32,276	173,248	13,902
Philippine Islands	102,499	9,215	179,526	13,669	264,217	22,025	263,703	20,403
Australia	80,119	8,503	164,421	12,680	99,118	10,827	203,309	17,266
Other countries	57,417	6,217	96,832	10,030	152,578	16,620	261,619	25,277
Cover paper ....lbs.	80,804	16,459	108,213	21,493	240,469	40,762	230,066	41,287
Grease-proof and waterproof paper ....lbs.	165,385	23,304	92,151	13,591	273,714	41,609	283,915	37,948
Wrapping paper ....lbs.	1,709,027	142,311	2,906,123	194,781	5,062,031	357,463	5,481,761	384,346
Surface-coated paper ....lbs.	541,451	74,328	390,861	59,798	1,412,653	159,562	1,081,962	137,622
Tissue and crepe paper ....lbs.	252,152	66,512	270,231	60,919	541,069	147,517	690,095	144,965
Toilet paper ....lbs.	418,503	50,254	286,992	35,824	736,694	91,916	700,002	92,749
Paper towels and napkins ....lbs.	107,592	16,557	116,946	18,115	325,323	40,544	282,847	41,730
Box board ....lbs.	2,343,242	70,044	5,054,727	157,078	6,375,716	183,025	8,875,363	258,684
Bristols and bristol board ....lbs.	96,349	12,382	102,883	10,636	198,633	29,717	544,964	27,427
Other paper board and strawboard ....lbs.	3,132,566	188,925	3,221,624	143,119	5,236,281	304,909	5,743,345	291,434
Sheathing and building paper ....lbs.	774,963	36,385	1,178,088	49,986	1,719,449	80,490	2,114,534	92,305
Wall board of paper or pulp....sq. ft.	2,201,964	72,641	5,826,769	190,070	2,843,626	98,344	8,338,640	271,231
Blotting paper ....lbs.	220,856	27,967	319,341	33,465	536,730	65,644	585,035	64,885
Filing folders, index cards, and other office forms ....lbs.	66,462	19,272	56,914	16,010	191,156	44,665	231,619	54,722
Papeteries (fancy writing paper) ....lbs.	24,838	8,558	39,121	10,321	63,200	22,466	80,129	21,596
Other writing paper ....lbs.	535,274	125,269	726,478	125,361	1,283,167	238,642	1,520,549	260,402
Paper hangings (wall paper) ....yds.	4,062,760	83,965	4,543,623	81,609	6,512,348	150,455	6,784,249	134,295
Paper bags ....lbs.	1,138,475	111,930	1,214,086	99,223	2,136,697	203,013	2,435,926	202,605
Boxes and cartons ....lbs.	1,417,246	96,963	1,213,228	90,435	2,826,705	206,179	2,909,217	194,273
Envelopes ....lbs.	177,089	39,307	224,189	36,453	376,215	79,442	462,500	77,385
Vulcanized fiber, sheets, strips, rods, and tubes ....lbs.	414,929	122,607	354,866	120,746	907,130	255,371	719,494	227,308
Manufactures of vulcanized and indurated fiber ....lbs.	22,691	12,234	34,450	10,265	72,400	28,198	74,872	18,582
Cash-register and adding-machine paper....lbs.	161,545	16,415	137,544	15,871	298,188	32,118	248,099	28,913
Other paper and paper products	.....	403,795	.....	337,510	.....	720,607	.....	701,125

WOOD PULP AND PAPER STOCK

Sulphite wood pulp ....tons	1,451	86,325	1,581	96,705	3,541	227,728	3,103	190,349
Soda wood pulp ....tons	153	16,842	218	21,220	390	39,119	267	24,273
Other wood pulp ....tons	696	162,679	144	9,300	1,194	254,720	497	20,950
Rags, and other paper stock ....lbs.	13,885,200	213,360	16,693,359	222,837	28,860,123	403,330	31,479,374	437,714

PAPER AND PULP MILL MACHINERY

Paper and pulp mill machinery ....lbs.	719,554	168,520	2,391,142	573,155	1,599,541	430,972	5,925,361	1,159,066

Japanese Paper Production

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., May 3, 1927.—According to the Japanese Paper Manufacturers' Association a total of 44,344 short tons of paper were produced in the association mills during the month of January, sales amounting to 43,387 tons. Nearly half of this output consisted of news print paper, other important classes being best grade printing papers, 5,492 tons, ordinary printing paper 5,475 tons, "torinoke" paper, 3,523 tons, and wrapping papers, 1,815 tons. Consumption of paper base stocks by the mills during January comprised 927 tons of rags, 520 tons of straw, 1,741 tons of waste paper, 20,373 tons of chemical pulp, and 18,557 tons of mechanical ground wood, 15,363 tons of the chemical pulp and 17,778 tons of mechanical ground wood were produced in the mills of the association.

Receiver for Kinnard Mfg. Co.

[FROM OUR REGULAR CORRESPONDENT]

DAYTON, Ohio, May 2, 1927.—The creditors of the Kinnard Manufacturing Company, makers of cartons, pails, boxes and novelties, Dayton, are receiving notice that E. J. B. Gorman has been appointed receiver by the Common Pleas court of Montgomery county, Ohio, and that pursuant to the orders of this tribunal, he is disposing of the assets of the company, and that he was ordered by the court, to pay a dividend to the creditors of the company.

All creditors were required to file their claims under the law on or before May 1, 1927, default whereof, by said order, said claims shall be forever barred.

The receiver is represented by Charles C. Benedict, and McMahon, Corwin, Landis & Markham, attorneys.

EXHIBITORS

GRAPHIC ARTS EXPOSITION
New York *Sept. 5-17, 1927*

American Adjustable Lockup Corp.
The American Printer
American Steel Chase Company
American Type Founders Company
The Babcock Printing Press Mfg. Co.
The Bahnson Company
Barnhart Brothers & Spindler
Barrett-Cravens Company
Russell Ernest Baum
Ben Franklin Publishing Company
Bingham Brothers Company
E. W. Blatchford Company
Bookbinding Magazine
Boston Wire Stitcher Company
Bourges Service, Inc.
Brandtjen & Kluge, Inc.
B. H. Bunn Company
Challenge Machinery Company
The Chandler & Price Company
Claybourn Process Corporation
The Cleveland Folding Machine Co.
Cline Electric Manufacturing Co.
Continental Typefounders Assn., Inc.
Dexter Folder Company
Freedman Cut-Outs, Inc.
Hacker Manufacturing Co.
Hamilton Manufacturing Company
Hammermill Paper Company
Harris-Seybold-Potter Company
C. B. Henschel Manufacturing Co.
Hill-Curtis Company
R. Hoe & Company, Inc.
Hoffmann Type & Engraving Co.
The Holliston Mills, Inc.
Ideal Roller & Manufacturing Co.
Imperial Type Metal Company
Indiana Chemical & Mfg. Co., Inc.
The Inland Printer Company
Int'l Assn. Electrotypers of America
Int'l Printers Supply Salesmen's Guild
Intertype Corporation
Johne-Werk, Bautzen, Germany
The Korfund Company, Inc.
Krug Electric Company
Kymson Building Corporation
Lanston Monotype Machine Company
Latham Machinery Company
E. P. Lawson Company, Inc.
Lewis-Shepard Company
Loring, Coes & Company, Inc.
Ludlow Typograph Company
George McKibbin & Son
George T. McLauthlin Co.
Machine Composition Association
O. J. Maigne Company
Margach Manufacturing Co., Inc.
Mergenthaler Linotype Company
Miehle Printing Press & Mfg. Co.
Miller Saw-Trimmer Company
The Monarch Engineering & Mfg. Co.
Murphy Specialty Company
Nat'l Assn. of Ptg. Ink Makers, Inc.
National Bundle Tyer Company
National City Paper Corporation
National Printers' Supply Company
Naumer Electric Company
Frank Nessel
Oversewing Machine Company
Peerless Roll Leaf Company, Inc.
J. W. Pitt, Inc.
John J. Pleger Company
Polygraphic Co. of America, Inc.
Potdevin Machine Co.
Geo. W. Prentiss & Company
The Printing Machinery Company
Production Meter Service Corp.
Rich & McLean, Inc.
J. A. Richards Co.
F. P. Rosback Company
H. B. Rouse & Company
The Schilling Press, Inc.
Sinclair & Valentine Company
Southworth Machine Company
Strathmore Paper Company
George R. Swart & Company, Inc.
Tech Trade School, Pressmen's Home
Thompson Type Machine Company
Thomson-National Press Company
United American Metals Corporation
United Printing Machinery Co., Inc.
Vandercook & Sons
Walden, Sons & Mott, Inc.
S. D. Warren Company
F. Wesel Manufacturing Company
The Willsea Works
Wood, Nathan & Virkus Co., Inc.

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Grand Central Palace, New York

September 5—17, 1927

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The following associations, by whom the 4th Educational Graphic Arts Exposition has been organized, will convene in New York coincident with the Exposition.

THE INTERNATIONAL ASSOCIATION OF PRINTING HOUSE CRAFTSMEN
INTERNATIONAL PRINTERS SUPPLY SALESMEN'S GUILD
INTERNATIONAL ASSN. OF ELECTROTYPERS OF AMERICA
UNITED TYPOTHETAE OF AMERICA
INTERNATIONAL TRADE COMPOSITION ASSN.
EMPLOYING BOOKBINDERS OF AMERICA

PAPER TRADE JOURNAL
ESTABLISHED 1872
With Which Is Combined
PAPER
The Magazine of the Paper Industry
HENRY J. BERGER, Editor

Member A. B. C. Audit Bureau of Circulations

Vol. LXXXIV New York, May 5, 1927 No. 18

CHEMICAL EXPOSITION

The shortening of the space of days before the opening of the Eleventh Exposition of Chemical Industries to be held September 26 to October 1, 1927 at the Grand Central Palace, New York City, indicates that a more universal interest will be shown than ever before in the history of the industry. It will be interesting to note and watch the developments of new materials that will be exhibited for the first time and which will tend to broaden the scope of the student's course which is arousing widespread interest throughout the trade as well as in all industry served by the chemical industries.

The management is preparing a brief on the student's course which will be widely distributed among chemists, colleges and industries. In addition to this an announcement will be made regarding the brief and course by H. E. Howe, Editor of *Industrial and Engineering Chemistry* before the educational and the industrial sections of the American Chemical Society at the annual meeting to be held in Richmond, Va.

The Exposition serves and helps to supply the market for more than forty different industries. It is through such a medium that the various methods, processes, machinery and instruments of precision used in manufacturing and handling chemicals are shown and demonstrated. Nowhere else is there an opportunity for the manufacturer or purchaser of chemicals and allied products to see and compare the values of the products.

Industry's debt to chemical engineers and chemists is increasing at a rapid pace. The modern laboratory of today develops astounding facts almost over night saving industry thousands of dollars as well as making the world safer and easier to live in.

His Majesty King George V once said, "Does not experience warn us that the rule of thumb is dead, and the rule of science has taken its place; that today we cannot be satisfied with the crude methods which were sufficient for our forefathers, and that those great industries which do not keep abreast of the advance of science must surely and rapidly decline?" The quotation from His Majesty is particularly true, for where would industry be today but for science. Unquestionably we as well as industry would still be in the dark ages of the dim past where crude methods and appliances sufficed for our forebears. Today, however, thanks to science, the Chemical Exposition enables actual comparison and demonstration of the chemist's scientific work and results. The past year of 1926 brought out the following contributions to industry by American Chemists and their significance is beyond an estimate of value:—

It has been shown that Silicon can replace tin as a hardening agent for copper and is already in considerable use for this purpose.

A new and rapidly expanding use for Chlorine has been developed in the production of Ethylene Glycol, which may replace glycerine in many applications.

About forty new Azo-colors have been developed in American research laboratories during the past year and placed on the market by our dyestuff manufacturers.

The examples mentioned are only a few of the outstanding chemical and scientific developments in the field. Chemical research has developed cheap oxygen and the Pyroxylin Lacquers increase in production following the development of "low viscosity" pyroxlin, a product which may be used in sufficient concentration in a lacquer to build up a reasonably thick film with the customary two to four coats thereby making great inroads on the paint and varnish industry.

At the numerous sections of the Chemical Exposition, many new developments will be exhibited and these in connection with the various papers which will be read together with the plans being matured for the Students' Course, will cover the chemical and industrial developments as never before.

862 SPECIES OF FOREST TREES

There are 862 species of forest trees in this country, according to the revised "Check List of the Forest Trees of the United States," just issued by the Forest Service, United States Department of Agriculture. If the different varieties and hybrids were added, the total of the different forms of forest trees would reach 1,177.

Of all the trees that make up our forests, 182 species are of special interest because of the commercially useful timber or other products they supply, the publication points out. However, it is indicated that the number of important species can not remain constant, changing from time to time with the development of commercial needs.

The previous check list of trees, compiled 28 years ago, listed but 604 different trees. The enormous increase in the number of trees that have become known since that time is due to the addition of newly discovered trees and the separation of tree species that previously were not distinguished from each other. In the new edition each of the different trees is designated by its proper technical name and by the common name adopted by the Forest Service. Each species is also accompanied by a list of all common names known to be applied to it in different parts of its range.

It has long been the endeavor of the Forest Service to standardize the common names of trees, so that not only the trees as they are met with in the forests, but the lumber cut from these trees, shall be known by these names. The importance in trade relations of such standardization of common names can not be overestimated. Failure to use standard common names for important timber trees and their woods has led to troublesome and expensive litigation.

"The one great object of all books on our trees," says the publication, "is to acquaint the public with the different trees we have and the names by which they are known. If the present confusion of common names of trees can be ended by general agreement on standard names for the different species, this object will be obtained more speedily."

Appended to the check list is a brief discussion of the principles which have been followed in selecting distinctive common names for different forest trees. These principles discourage the use of ambiguous and misleading names, particularly with reference to the names applied to woods. A list is given of the common names the Forest Service uses in designating the commercial woods of our markets, and also the corresponding names the trade applies to these commodities.

Museums of Peaceful Arts Open

The opening of the Museums of the Peaceful Arts occurred on Wednesday evening, April 20, 1927, following a dinner meeting of the American members of The Newcomen Society. The Museums of the Peaceful Arts occupies temporary headquarters at the Scientific American Building, 24 West 40th street, New York, where a start has been made in organizing a great industrial technical museum for the City of New York. A recent bequest of the late Henry R. Towne is making this Museum a practical realization.

The Newcomen Society is organized for the study of history and technology. Its headquarters are in London, England, but it has an active group in America which meets annually for presentation of papers and the discussion of historical topics.

Mr. Charles Penrose, American member of Council, presided at the meeting which followed dinner at the Engineers' Club. This meeting was held simultaneously with a meeting in London and a paper on Marc Sequin and the Invention of the Tubular Boiler was read at both gatherings. This paper brought out the facts tending to show that Marc Sequin had priority in inventing the tubular boiler by taking out a patent for it in 1827. Dr. Fred R. Low, Editor of *Power*, presented some brief notes on the First Steam Engine in America which was put in operation in 1755 to pump out copper mines near Belleville, N. J. The third paper was by Guy Hubbard, Associate Editor of *Mechanical Engineering*, who told of the Life and Work of Thomas Blanchard, a prolific inventor, who is known for his invention of the gun stock turning lathe and his pioneer work in navigating the upper Connecticut River.

Following this the group adjourned to the Museums where they were greeted by Dr. George F. Kunz, President of the Museums. Dr. David E. Smith, President of The History of Science Society, told of his collection of early mathematical instruments to which he had devoted his life in accumulating, which he presented to the Museums of the Peaceful Arts. The party then enjoyed a survey of these rarities as well as the other treasures of the Museums which include a portion of the lightning rod which Benjamin Franklin erected on St. Paul's Cathedral, a collection of original Ericsson models, memorabilia of James Watt, and representative specimens of architecture taken from notable New York residences.

H. A. Moses Presents Carillon to Church

[FROM OUR REGULAR CORRESPONDENT]

SPRINGFIELD, Mass., May 3, 1927.—Horace A. Moses, head of the Strathmore Paper Company, has given a 60 bell carillon to the Trinity Methodist Church here. There will be four full octaves and the last 13 notes will have double bells. The total weight will be 48,000 pounds. The carrillon can be played by hand or automatically and will sound hours and half hours on Western Union time during the day.

Box Board Production for March

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., May 2, 1927.—March production of boxboard, based on reports to the Department of Commerce by 92 firms operating 119 plants, and in addition for earlier months for three concerns now out of business, was 82.8 per cent of capacity, as compared with 80.7 per cent in February and 87.0 per cent in March, 1926. In the following table the capacity data vary according to the normal number of working days in each month, no allowance being made for those mills in which the five-day week was used.

Year and Month	Operation			Production			Orders received	Unfilled Orders (end of month)
	Inch hours		Per cent of	Short Tons		Per cent of	Short Tons	
	Capacity	Operated	Capacity	Capacity	Output	Capacity		
1926								
January	10,081,400	8,134,718	80.7	241,377	197,360	81.8	211,263	120,091
February	9,597,504	7,975,249	83.1	230,568	196,965	85.4	183,030	106,269
March	10,797,192	9,161,681	84.9	259,389	225,688	87.0	219,994	104,128
Total (3 mos.)	30,476,096	25,271,648	83.0	731,334	620,013	86.1	614,287	.....
April	10,397,296	8,628,895	83.0	249,782	207,765	83.2	194,824	90,671
May	9,997,400	8,400,090	84.0	240,175	207,498	86.4	200,832	83,452
June	10,397,296	9,139,549	87.9	249,782	221,909	88.8	242,089	109,559
July	10,397,296	8,603,941	82.8	249,782	206,235	82.6	219,271	122,202
August	10,397,296	9,140,370	87.9	249,782	226,337	90.6	212,845	110,362
Sept.	9,997,400	9,311,937	93.1	240,703	230,050	95.6	219,850	102,027
October	10,397,296	9,659,004	92.9	250,640	226,180	90.2	224,829	93,263
Nov.	10,027,378	8,527,390	85.0	241,195	217,850	90.3	187,295	69,118
Dec.	10,399,172	6,943,193	66.8	250,250	165,074	66.0	190,163	86,562
Total	122,883,926	103,626,017	84.3	2,953,425	2,528,911	85.6	2,506,285	.....
1927								
January	9,851,050	6,998,505	71.0	244,007	173,629	71.2	194,285	105,669
February	9,457,008	7,587,981	80.2	234,552	189,254	80.7	183,786	101,905
March	10,639,134	8,597,290	80.8	263,871	218,645	82.8	229,336	113,621
Total (3 mos.)	29,947,192	23,183,776	77.4	742,430	581,528	78.3	607,407	.....

Year and Month	Shipments of boxboard	Stocks of boxboard, end of month	Consumption of waste paper		Per cent of Capacity	Stocks of waste paper end of month	
	Short Tons		Short Tons			On hand	In transit and unshipped purchases
			Capacity	Consumed		Short Tons	
1926							
January	196,544	49,634	233,311	187,915	80.5	172,203	44,477
February	194,704	50,717	223,512	187,871	84.1	166,536	55,035
March	222,018	54,265	251,451	214,046	85.1	154,923	42,971
Total (3 mos.)	613,266	.....	708,274	589,832	83.3	.....	.....
April	208,281	53,661	242,138	209,245	86.4	149,742	50,480
May	207,934	54,599	232,825	193,892	83.3	140,718	45,327
June	215,931	60,080	242,138	213,912	88.3	139,967	58,820
July	206,591	59,193	242,256	201,582	83.2	145,334	60,482
August	224,702	60,420	242,538	222,403	91.7	195,597	57,285
September	227,824	62,669	233,325	212,608	91.1	120,087	70,311
October	233,593	55,650	242,658	216,871	89.4	142,830	59,076
November	211,005	62,058	233,455	201,633	86.4	151,187	46,175
December	172,815	55,159	241,418	159,969	66.3	166,153	34,662
Total	2,521,942	.....	2,861,025	2,421,947	84.7	.....	.....
1927							
January	175,528	53,562	232,942	163,337	70.1	163,023	38,062
February	188,760	53,580	224,160	182,592	81.5	158,527	40,602
March	217,759	54,368	252,180	209,327	83.0	154,742	43,789
Total (3 mos.)	582,047	.....	709,282	555,256	78.3	.....	.....

Zellerbach Co. To Build at Eugene, Ore.

EUGENE, Ore., April 28, 1927.—Within about ten days bids will be received by the Zellerbach Paper Company for the construction of a branch warehouse and office building in this city. Plans for the building were drawn by Roscoe D. Hemenway, Bedell Building, Portland, and call for a one-story concrete structure. It will cover an area of 148 by 49 feet; will have steel sashes throughout and contains a rolling steel door. The plans also call for a class "C" roof.

The general contract and sub-contracts will be let by the paper company at the same time.

Pulp Market at Oslo Unsatisfactory

WASHINGTON, D. C., May 3, 1927.—The market for mechanical ground wood is slack, according to a report from the American Consulate at Oslo. The sulphate market is also reported to be poor and prices quoted hardly covering cost of production. Easy bleaching and strong sulphite are rather weak, but are in better demand than sulphate.

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Technical Association of the Pulp and Paper Industry

AN ORGANIZATION FOR THE ENCOURAGEMENT OF ORIGINAL INVESTIGATION AND RESEARCH WORK IN MILL ENGINEERING AND THE CHEMISTRY OF PAPER, CELLULOSE AND PAPER-MAKING FIBERS GENERALLY; IT AIMS TO PROVIDE MEANS FOR THE INTERCHANGE OF IDEAS AMONG ITS MEMBERS IN ORDER THAT PROCESSES OF MANUFACTURE MAY BE MADE MORE EFFICIENT AND IMPROVED ALONG TECHNICAL LINES.

Conducted by W.G. MacNAUGHTON, Secretary

The Drying Of Paper Products*

By Dr. W. K. Lewis, Prof. W. H. McAdams and Dr. F. W. Adams

Note: In writing this article we have assumed that the reader will be familiar with the theories of drying as at present generally accepted, and have, therefore, restricted the treatment to the discussion of data throwing new light on the mechanism of drying porous sheet materials, with specific reference to paper products.

A number of years ago this Laboratory called attention to the fact that the evaporation of liquids from fibrous materials in sheet form, under constant drying conditions—i. e., constant temperature, humidity and velocity of the drying air, and constant heat source, if heat be supplied other than from the air itself,—follows very simple laws. So long as the amount of liquid in the sheets is enough not only to saturate the fibers but also to fill the voids to such a degree that the liquid distribution throughout the sheet is maintained substantially uniform by capillarity, the rate of evaporation of the liquid is constant. When the liquid content falls below this point, the rate of evaporation decreases; and under these conditions, it is found, experimentally, to be approximately proportional to the liquid content. On the basis of certain assumptions, drying equations were set up that are widely used in engineering design. It has always been recognized that certain of these assumptions were approximate and that others do not apply under conditions frequently encountered in the paper mill. Since that time, additional data have been secured, which throw important light on the mechanism of drying, and on the characteristics of the drying operation as applied to pulp and paper. It is the purpose of this article to present and discuss these data; but it should be clearly understood that it is so far only preliminary in character, and much work will have to be done before an ultimate analysis of the problem is finally achieved.[1]

Air Drying of Sheet Materials

Specifically, the basic equation for the air drying of sheet materials (i. e., where the heat consumed in the drying operations comes entirely by conduction at the expense of the sensible heat of the air employed), states that the rate of evaporation from stock containing insufficient water to keep the surface so thoroughly wet that it is equivalent to a surface of water itself, is proportional: first, to the amount of water in the stock available for evaporation; and, second, to the difference in humidity between that corresponding to saturation at the stock temperature and that prevailing in the drying air. Calling the content of water in the stock available for evaporation, (W), the humidity of the air, (H), that of the stock (corresponding to that of saturated air at the temperature of the stock), (Hs), and designating time by (θ), the rate of evaporation, $\frac{dW}{d\theta}$ is given by the equation,

$$\frac{dW}{d\theta} = kW(Hs - H)$$

It must be remembered that (k) is a function of the air velocity, but constant for any given value of this variable. In the actual utilization of this equation for purposes of engineering design, it has hitherto been customary to assume that stock humidity corresponds to wet-bulb conditions of the drying air, i. e., that

$$Hs = Hw$$

where (Hw) is the humidity of air saturated at the wet-bulb temperature.

If one grant that one is dealing with constant drying conditions, i. e., with a given temperature and humidity of the drying air and a given velocity of that air over the surface of evaporation, it is clear that one would have a certain rate of evaporation from the surface of pure water. Furthermore, it is inconceivable that a wetted surface could ever have a greater evaporative rate than this. If the surface of the material being dried be only partially wetted, it is obvious that the surface from which evaporation is taking place is lessened. It is natural to suppose that, other things equal, the rate of evaporation from that fraction of the surface actually wetted would be the same as from the surface of pure water. Consequently, the actual evaporation ought to be that from pure water times the fraction of the surface that is wetted. However, there is a complicating factor of great importance. The heat necessary to evaporate the water comes by conduction from the drying air. Where the evaporating surface is water alone, the area available for heat pick-up is identical with the area available for evaporation. Where, on the other hand, the evaporation is taking place from a surface only a fraction of which is wetted, the surface available for evaporation (the wetted surface) is less than that available for heat pick-up. Obviously, therefore, the ratio of heat-pick-up to evaporation in such a case would be greater than in the evaporation from a pure water surface. Now the temperature assumed by evaporating water (i. e., the wet-bulb temperature) is determined by the balance between heat inflow due to temperature difference between the drying air and the water, and the heat consumption by evaporation due to the humidity difference. Where one is dealing with a surface only partially wet,

* Contributed as Contribution No. 184 from the Department of Chemical Engineering, Massachusetts Institute of Technology, Cambridge, Mass., and read at the Annual Meeting of the Technical Section of the Canadian Pulp and Paper Association, Montreal, Jan. 26-27, 1927.

[1] It is felt unjustifiable to introduce into this article any detailed discussion of results already available elsewhere. The essence of the position of the writers will be found in an article published in the Journal of Industrial and Engineering Chemistry, Volume XIII, p. 427, 1921, and a more extended discussion with applications in the chapter on Drying in "Principles of Chemical Engineering" by Walker, Lewis and McAdams, McGraw-Hill Book Co., Inc., 1923.

since the ratio of the surface available for evaporation to that available for heat pick-up is lessened, it necessarily follows that the temperature difference between the drying air and the surface exposed, must decrease, and the humidity difference between the evaporating water and the drying air, must increase above the values corresponding to wet-bulb conditions. Furthermore, the lower the fraction of the exposed surface that is wetted, the greater must be the divergencies of these quantities from wet-bulb conditions, and the more nearly will the temperature of the stock approach that of the drying air.[3]

One assumption employed in the engineering utilization of the drying equation referred to, is that, in air drying, the stock assumes wet-bulb temperature. Furthermore, the humidity difference which causes drying is calculated by taking the difference between humidity at the wet-bulb temperature and the humidity of the drying air. From the preceding discussion it is obvious that there are limits to the validity of this assumption. While it has always been appreciated that a certain time would be required to bring the initial material to wet-bulb temperature, that toward the end of the drying operation the divergence from wet-bulb temperature would be considerable and that the stock would finally come to the temperature of the air[3] itself, no accurate data on these divergencies have been available.[4]

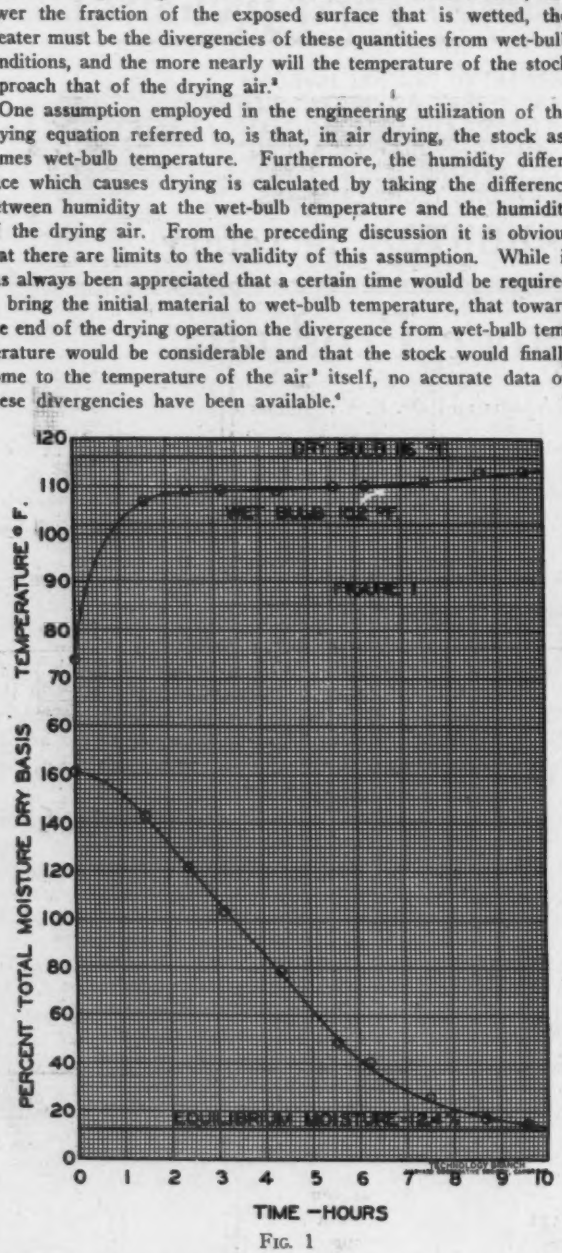


Fig. 1

Fig. 1[5] shows data on the air drying of fiber board. The stock had an approximate thickness of 0.17 inches when dry, and weighed 0.47 pounds per square foot. The drying air had a dry-bulb temperature of 116 degrees F. and a wet-bulb temperature of 102 degrees F. The velocity of the air past the stock was approximately 6.5 feet per second and care was taken to have the distribution equal on both sides. The temperature of the stock was obtained by inserting fine thermocouples into the middle of the sheet. The plot shows the observed temperature of the stock and its moisture content expressed on a dry basis, both plotted against the time of drying. It will be noted that the cold stock rises in temperature very rapidly at the start, but the curve shows no indication of a halt at the wet-bulb temperature. However, by the

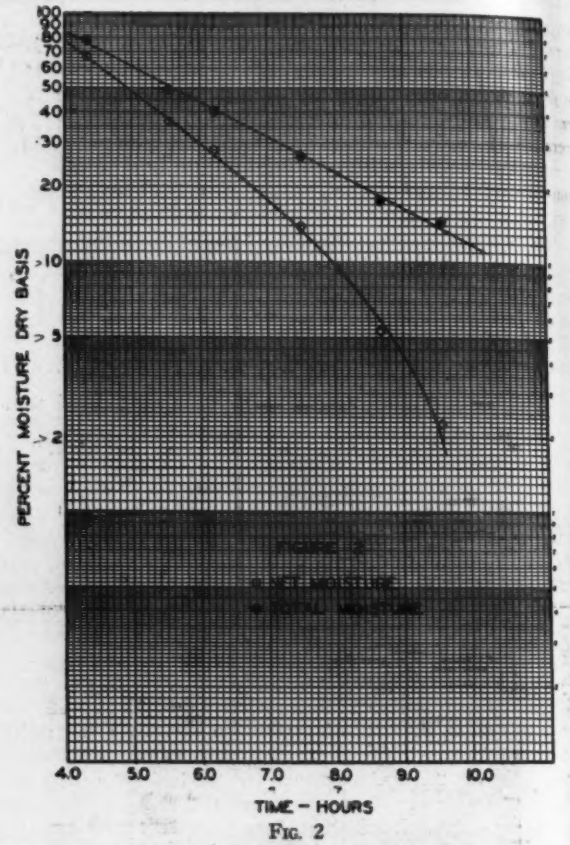


Fig. 2

time the wet-bulb temperature is reached, the rate of temperature increase is low. There never seems to be a time at which the temperature remains absolutely constant, although the rate of rise becomes very small at a temperature somewhat above that of the wet bulb. It is surprising to find that the stock does not halt at the wet-bulb temperature, despite the fact that its moisture content at that point in the drying operation is over 150 per cent.

Focussing attention upon the moisture curve, it will be noted that the rate of evaporation at the start is low, i. e., the curve is flat. This is because the stock temperature was initially far below the wet-bulb temperature of the air in the drier; and, while the stock temperature rose rapidly in the earlier stages, until it had gone up, the drying rate could not be high, because of the low partial pressure of water vapor. However, once the stock has warmed up to substantially its equilibrium value, a period sets in, during which the evaporative rate is constant, i. e., the moisture curve is straight. This is the zone of constant drying rate referred to above. After this period, at between 60 per cent and 70 per cent moisture, the drying rate slows up. This corresponds to the final phase of the drying operation, when the rate of evaporation is substantially proportional to the moisture content of the stock.

Evaporative Rate

Everyone appreciates that cellulose in equilibrium with moist air, retains a certain percentage of water, and that such air can never dry the fiber below this equilibrium moisture content. Fur-

[3] In this connection, see below the discussion relative to the change in thermal resistance to flow of heat from air to stock as drying proceeds.
[4] In this connection, see particularly pages 441-442, "Principles of Chemical Engineering," Walker, Lewis & McAdams, McGraw-Hill Book Co., Inc., 1923.
[5] Fisher, Proc. of the Royal Society, A. Vol. 103, p. 150, 1923.
[6] Courtney and Maria, Undergraduate Thesis, M. I. T., 1922. Copies may be obtained from the Library in the Institute.

thermore, fibers containing less moisture than this, if brought into contact with air at the same humidity and temperature, will pick up moisture from it. This equilibrium moisture varies with the humidity and the temperature of the air. It therefore follows that the water that it is possible to remove from cellulose by air drying, is not the total water on the cellulose, but the difference between the total water and this equilibrium water. The drying equations are based on the assumption that, in this final stage of drying, the rate of evaporation is, under constant drying conditions, proportional to the net, evaporable water, i. e., to the total water minus the equilibrium water. On this assumption, it is easy to show, that if one plot the logarithms of the net moisture content as ordinates against time as abscissae, in any specific drying operation, the points should fall on a straight line. The plotting is more conveniently done by transferring the data directly to semi-logarithmic paper.

The lower curve of Fig. 2 shows the data of Fig. 1 re-plotted in this way, and it is clear that the result is not a straight line. However, this equation is based not only on the assumption that the evaporative rate is proportional to the net moisture content, but also that the stock temperature is constant at that of the wet-bulb. Fig. 1 shows that this latter assumption is not valid, and this may well be the cause of the divergence of the data shown in

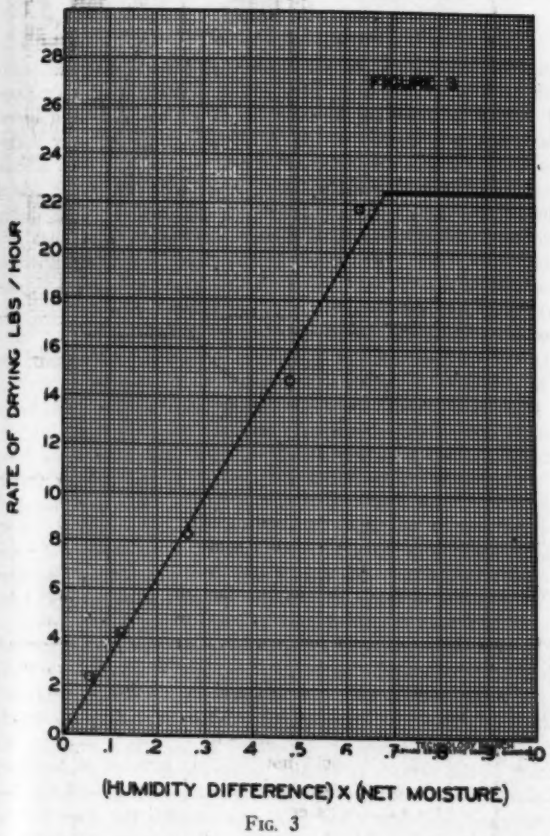


FIG. 3

Fig. 2. The assumption of constant stock temperature was originally made so that it would be possible to compute the partial pressure difference; or, what is equivalent to the same thing, the humidity difference between stock and air, since it is generally agreed that this is the effective driving force in evaporation. Now, inasmuch as stock temperatures were measured in these experiments, it is possible accurately to compute humidity differences without this assumption.

Since the drying equation states that, during the final stage, the instantaneous rate of drying is proportional to the product of net moisture content and humidity difference, a plot of the rate of drying as ordinates against this product as abscissae, should yield a straight line. The data of Fig. 1 thus re-plotted are shown in Fig. 3. This proves that the use of the basic drying equation is justified experimentally. From the data of Fig. 1, using the drying equation, the moisture content has been calculated as a function of time, and is shown by the solid line in Fig. 4. The circles represent experimentally observed data points.

It is an interesting fact that if one plot these drying data as

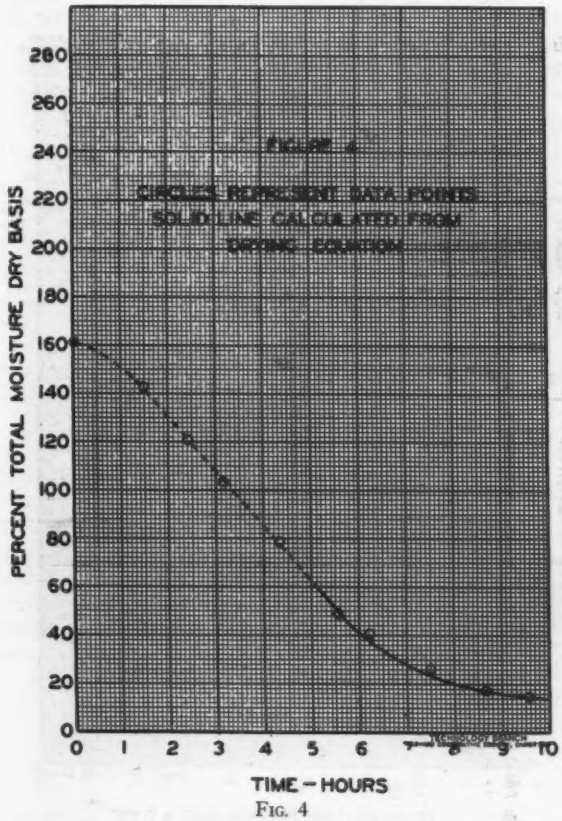


FIG. 4

logarithms of the total water rather than of net water, against the time, the line comes out substantially straight (upper curve of Fig. 2). This must mean that the use of total rather than net water tends to correct quite completely for the deviations of the stock from wet-bulb temperature. Furthermore, drying data on many other materials dried under widely differing conditions, show the same tendency. Consequently, this method of plotting is one of the most satisfactory for many practical engineering drying problems. One must, however, never forget that this method breaks down when in the immediate neighborhood of equilibrium moisture. That this must be true is obvious, when one remembers that drying ceases as equilibrium moisture is approached, although total moisture at that point is by no means negligible. No one has carefully investigated the shape of the curve at the end of the drying operation; but, inasmuch as one seldom tries to approach equilibrium moisture closely, the question is one of academic rather than engineering importance.

It is quite generally agreed that the humidity difference Hs — H, which may conveniently be designated as ΔH, is the driving force causing evaporation. Consequently, the actual rate of evaporation divided by this driving force, $\frac{dW}{\Delta H\, d\theta}$ may be called the specific evaporative rate. A study of Fig. 3, giving expression as it does to the basic differential drying equation, makes it clear that, below

the critical moisture content, the specific evaporative rate drops off rapidly as the moisture content of the stock decreases. It therefore follows that, as the stock dries, the diffusional resistance to escape of moisture from the stock must increase. The above analysis indicates that this diffusional resistance is inversely proportional to the content of net moisture, so long as one is below the critical point.

It is clear that, unless the moisture content of the stock be quite low or its temperature rise large, most of the heat picked up by

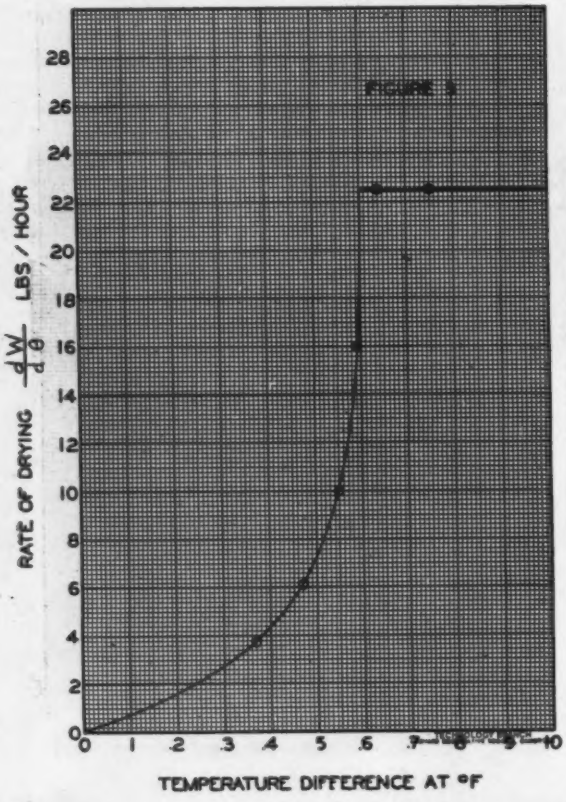


FIG. 5

the stock is consumed in evaporating moisture. Therefore, the rate of evaporation, $\frac{dW}{d\theta}$, is substantially proportional to the rate of heat pick-up by the stock from the air. Were the thermal resistance to heat flow from air to stock constant, $\frac{dW}{d\theta}$ would be proportional to the temperature difference, Δt, between stock and air. In Fig. 5 the value of $\frac{dW}{d\theta}$ is plotted against Δt. Inspection shows that the two quantities are by no means proportional, and that the ratio of evaporative rate to temperature difference decreases rapidly as the rate of evaporation falls off, i.e., as the stock dries. This demonstrates a very marked increase in thermal resistance to flow of heat from air to stock as the moisture content of the stock decreases. It seems likely that toward the end of the drying operation, the actual evaporation of the moisture takes place, not on the surface of the stock but in a plane beneath the surface the depth of this plane of evaporation increasing as the stock dries. From this plane of evaporation, the moisture escapes through the outer surface by a process of vapor diffusion. This hypothesis, while by no means as yet thoroughly substantiated, offers an explanation of the rapid increase in thermal resistivity as drying proceeds.

Drying by Contact With Heated Surface

A second method of drying sheet materials by evaporation of moisture into air, is by placing one side of the sheet upon a heating element, impermeable to water vapor, all heat for evaporation coming by conduction from this element. Particularly where the temperature of the heating element is high, this results in rapid, complete drying of that layer of the sheet in immediate contact with the heating surface, the thickness of this layer increasing progressively as time goes on. However, sheet thickness is of great importance. The limiting factor is the diffusion of heat from the heating element through the sheet. It is obvious that the amount of moisture to be evaporated and the average distance that the heat is required to travel, are each proportional to thickness. Therefore, the time of drying, under constant drying conditions, is inversely proportional to the square of the thickness of the sheet.

The problem of greatest interest in the paper mill, namely, that of drum drying, is an exceedingly complex combination of these two sets of conditions.

Study of a Pulp Drier

In order to analyze the mechanism of drum drying, the variation of sheet temperature with moisture content on a commercial pulp drier handling bleached sulphite pulp has been determined,[6] and is presented in Fig. 6. The pulp passed over thirty-nine rolls at a linear velocity of 72 feet per minute, each side of the sheet coming alternately into contact with the steam-heated drums. The sheet had an approximate thickness of 0.038 inches when dry, and weighed 0.100 pounds per square foot on a dry basis. The steam temperature in the drum was maintained at about 274 degrees F., and warm air at about 130 degrees F. was directed against the sheet as it passed over certain drums. The location of these air ducts is designated in Fig. 6 by the letter (A). A small amount of additional warm air (designated by B) at the same temperature is blown into the pocket formed by the pulp sheet beneath the drums in the top tier (odd numbered drums), except beneath drums 1, 19, 39. This air is of low velocity, and serves merely to sweep the vapor-laden air away from the tending side of the machine, its effect on the rate of drying of the sheet being small. The surface temperature was measured on each side of the sheet entering and leaving each drum as close as possible to the point of tangency of the sheet and drum (about six inches from the drum), and on the outside of the sheet at the midpoint on the drum, by means of a thermocouple[7] compensated for heat losses. In plotting these pulp temperatures in Fig. 6, the two surfaces of the sheet are shown independently of each other. The upper surface of the sheet leaving the press rolls is designated by circles in plotting temperatures. The temperatures of the other surface of the sheet (felt side) are shown as crosses. These points are connected by lines to distinguish the location of the surface in relation to the drums. The surface of the sheet when in contact with a drum is drawn as a solid line, the outer surface being a line of dashes. Where the sheet is traveling through the air between drums, the surface temperatures are connected by dotted lines. These straight lines are drawn between experimentally determined temperature points, but, of course, do not indicate conditions at intermediate points. Surface temperatures of the drum were also measured with the same device. Three samples for moisture were torn from the sheet at approximately the mid-point of every bottom drum, one sample about eighteen inches from each edge and one sample from the

[6] Unpublished Report, M. I. T. School of Chemical Engineering Practice, Bangor Station, 1925.

[7] Boyer and Buss, Ind. & Eng. Chem., 18, 728, 856 (1926); Paper Trade J. 83, No. 14, p. 50 (Technical Section p. 118), Sept. 30, 1926.

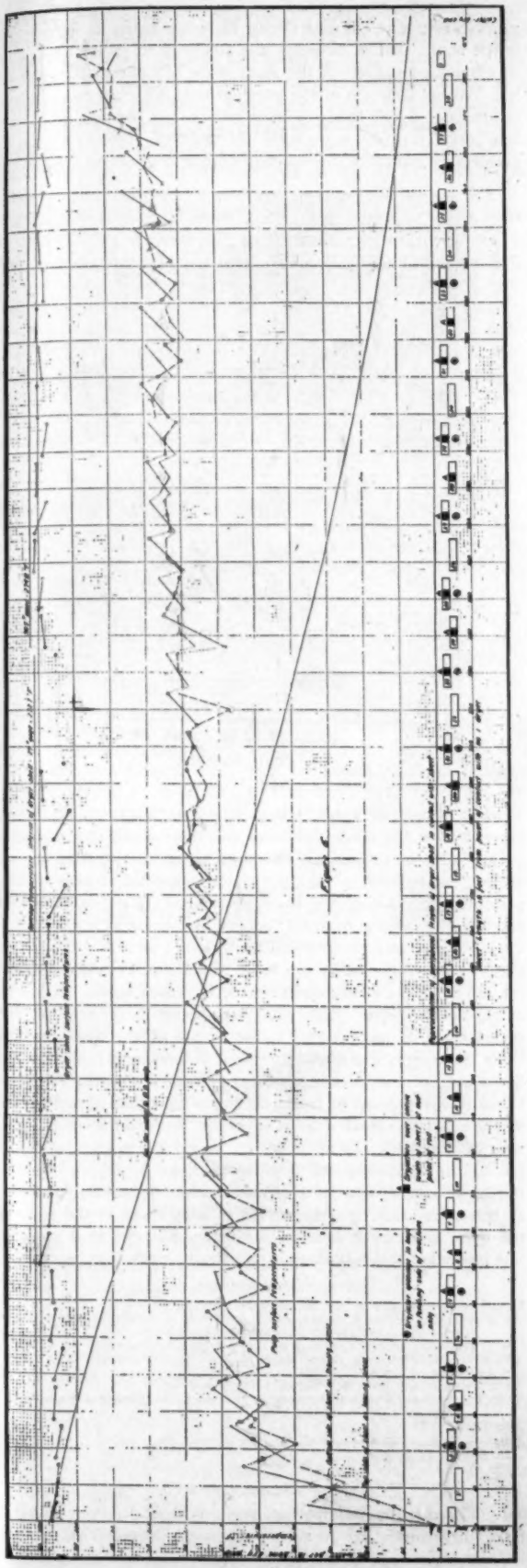


FIG. 6

center of the sheet. An average of the moisture content of the three was calculated for each drum, and a smooth curve has been drawn through the points, showing the variation of moisture content along the drier.

Inspection of this diagram shows clearly that the drying divides itself into three stages: first, a preliminary heating up of the pulp; second, a period of evaporation from the wet sheet at a rate substantially constant; and, finally, a period of evaporation at a rapidly decreasing rate. During the first half of the second period, the temperature of the stock remains nearly constant. It then begins to rise slowly, and continues upward at a substantially uniform rate until the very end of the drying operation, when a somewhat sudden final rise occurs.

During the pre-heating stage, the rate of heat supply from drum to stock, expressed as B.t.u. per hour, per square foot of active drier surface, per degree Fahrenheit temperature difference between the drier shell and the sheet, is 48. During the second stage, the corresponding heat transmission falls to 33. This stage continues until the moisture content of the stock has dropped to about 55 per cent on the dry basis and the temperature has risen to approximately 200 degrees F. The coefficient of heat transmission during the third stage decreases progressively and rapidly as drying proceeds, but is always below that of the second stage, and toward the end of the drying process far below it.

Due to uneven tension on the two ends of the press rolls, the moisture content of the stock leaving them varies across the width of the sheet. The data covering the moisture content of the two edges and the middle are plotted in Fig. 7. It will be noted that the curves show a decided tendency to remain parallel, the rate of evaporation at different stages being almost the same, so that inequality in initial water persists in the final product; but the percentage differences after drying tend to be greater than initially. Inspection shows that by moving the curves horizontally (which is equivalent to adjusting the initial moisture to a common basis), the curves can be made substantially to coincide.

The data as to moisture content during the final stage of drying, after passing the critical point, are plotted in Fig. 8 on semi-logarithmic paper. The ordinates are total moisture on the dry basis, and the abscissae are the roll numbers, which are obviously proportional to the time of travel. On these curves the next to the last point is in all cases low. The reason for this is not known. Otherwise, each of the three curves, one for each of the two edges of the sheet, and the third for the middle, are linear and parallel well within the experimental error.

Problem Fundamentally Simple

These facts demonstrate that drum drying of this type shows the characteristic stages of ordinary air drying, and that as a basis of design the problem can be treated as analogous. In view of the complexity of the phenomena involved, this relative simplicity of the overall results is surprising. The surface of the stock in contact with the drum, rises sharply in temperature on passing over it (see the full lines on the temperature diagram, Fig. 6). On leaving the drum, the temperature of this side of the sheet always drops, due to its contact with the colder atmosphere. On the next drum this surface becomes the outer side of the sheet.

LEGEND: Ordinates; 1 division (outside) = 0.2 lb. water per lb. bone-dry pulp; 1 division (inside) = 20° F. temperature, beginning at 50°. Abcissae; 1 division = 10 ft. length of paper measured from point of contact with No. 1 drier. Rectangles just below base line represent peripheral length of drier shell in contact with sheet. Letters (A) over black squares, represent dryjectors over entire width of sheet at mid-point of roll. Letters (B) in circles, represent dryjector openings in bays on tending side of machine. Two curves are shown for temperatures of pulp surface; solid lines show temperature of inner surface in contact with drier shell; long dashes show same for outer surface (note that these lines alternate); short dashes indicate surfaces between drier-shells. Curve rising first is for the bottom side of sheet as leaving press; the other curve is for the top side. Long oblique curve shows average pounds water per pound bone-dry pulp. Short curves show drier shell temperatures. Top curves show average temperature interior of drier shell — 29 lb. gage = 272.7° F. (left) and 30.5 lb. gage = 274.8° F. (right).

In those cases where air is blown against the drum at the midpoint of the travel of the sheet over it, the temperature of the outer surface tends to drop sharply, particularly in the earlier stages of drying (see below). Beyond this point on the drum the temperature rises, though less than the inner surface of the sheet. The heat of the drum drives the moisture away from the surface of the sheet in contact with the drum, outward through the sheet, to escape into the air. There must be a tendency for the hot, moisture-laden air, expelled outward through the sheet by this breathing process, to condense to a certain degree in the outer layers of the sheet, so that on leaving the roll, these outer layers are much moister than the inner ones. On passing over the next roll, the whole process is reversed. None the less, except in the stages of preliminary heating, the temperature changes at any given point of the sheet, as it passes over a given roll, are a relatively small fraction of the total temperature rise of the sheet above its initial value.

It must not be concluded that these temperature changes from roll to roll are without significance. Thus, it will be noted that, whereas in the absence of active air circulation, the temperature of the side of the sheet away from the drum tends to increase in passing over it, air directed against the sheet so greatly overbalances this tendency that, despite the heat fed to the sheet from the drum with which it is in contact, there is, in general, a marked drop in temperature of the outside surface in going over the first half of the drum, particularly in the earlier stages of drying, where the sheet is wet. After the zone of logarithmic drying is reached, this phenomenon fades out. This can be explained on no other assumption than that the air, directed against the outer surface of the sheet on the roll, produces marked evaporation, with its concomitant absorption of heat. If it be in the least desirable to increase the drying capacity of a set of drums, it can be readily accomplished, not only without any increase in steam consumption, but with an actual saving in heat, by the expedient of forcing air

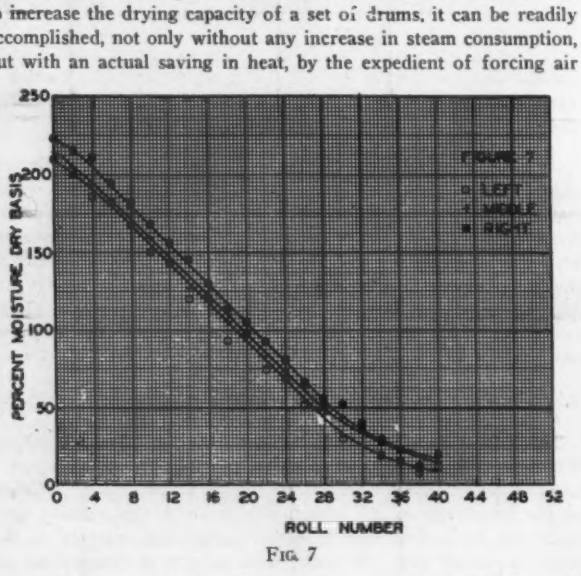


FIG. 7

at relatively high velocity over the outer surface of the sheet, and preferably counter current to its direction of travel. This will be exceedingly effective during the second stage of drying, i. e., during the period of constant drying rate. To do it to best advantage, one should use no more air than at present; indeed, less air would be desirable. This means, however, that to secure the velocity past the surface of the sheet there must be a housing over the drums. It certainly does not seem impossible to undertake the mechanical design of a drum housing so readily removable that it need not interfere with threading the machine.

While analysis of the data here presented leads to the conclusion that high air velocity past the sheet promises the most effective means of increasing drying capacity during the stage of constant drying rate, the data indicate equally conclusively that this means will not be effective during the other stages of drying. The initial stage, that of bringing the stock up to temperature, could be eliminated entirely if the stock were brought to the press roll hot. Would it be out of the question to preheat the stock by passing through a tub followed by a suction box, or through a steam box just before the press roll? In the final stage of drying, the problem is primarily one of maintaining high stock temperature.

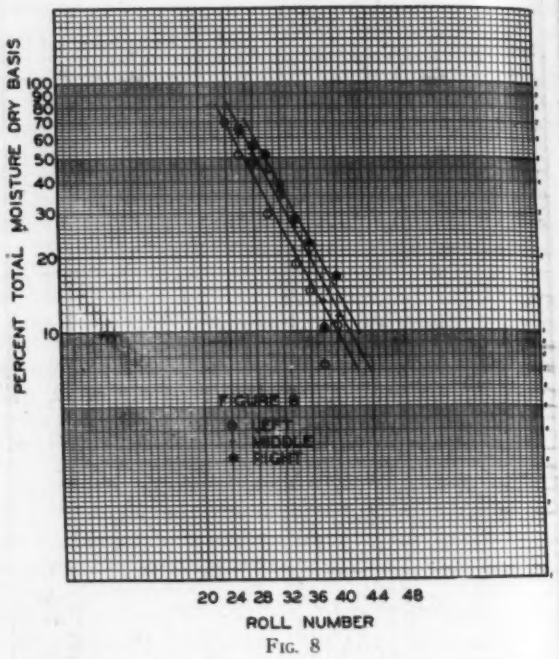


FIG. 8

If air be employed at all, it should be hot. However, during this stage, by far the most promising means of increasing drying capacity, is by the use of thin sheets. During the two first stages of drying, the production capacity of the apparatus, assuming steam pressure, air velocity, and the like as fixed, is substantially independent of thickness of sheet; because, while the time required for drying is inversely proportional to thickness, so that with a thinner sheet the machine can be run more rapidly, the lessened weight of the thinner sheet counterbalances the increased speed. In the final stage, on the other hand, the time required for drying, other things equal, is proportional to the square of the sheet thickness. Here, therefore, the allowable speed is inversely proportional to the square of the thickness. Since, however, capacity is proportional to the product of thickness times speed, the capacity of the machine for this final stage is inversely proportional to the thickness of the sheet. In other words, to get the maximum capacity out of the equipment during this last stage of drying, the stock should be run as thin as it is mechanically practicable to handle. In this connection, it is important to keep in mind the fact, that the more moisture it is allowable to leave in the final stock, the less important this last stage of the drying operation becomes.

Nomenclature

H = Humidity of drying air, lb. water/lb. dry air.
H_s = Humidity of stock (corresponding to that of saturated air at the temperature of the stock) lb. water/lb. dry air.
H_w = Humidity of air saturated at the wet-bulb temperature.
ΔH = Humidity driving force, $H_s - H$.
k = Constant of drying.
Δt = Temperature difference between stock and air.
W = Per cent net evaporable water in the stock on the dry basis, pounds of water per 100 lb. of dry stock.
θ = Time.
$\frac{dW}{d\theta}$ = Rate of evaporation.

Summary

1. The three most important ways of drying porous sheet materials by evaporation are: first, simple exposure of the materials

to unsaturated air; second, heating the material by bringing one side of the sheet into contact with a solid heating element; and third, a combination of these two methods.

2. In all three methods, the drying operation under constant drying conditions consists of three stages: first, a period of preheating, during which but little drying occurs; second, a period of drying at a rapid and substantially constant rate; and, finally, a period of drying at a rate decreasing rapidly as the moisture is driven out of the stock.

3. Data are given to demonstrate that during the final stage of drying, under exposure to air alone at constant temperature, humidity, and velocity, the drying rate is proportional to the content of free moisture, and also to the humidity difference between stock and drying air.

4. These data show that during drying of this sort, the stock does not remain substantially at the wet-bulb temperature, even when quite wet, but rises somewhat above it at an early stage of the operation, and continues to increase in temperature throughout the drying process. The data also show that as drying progresses during this stage, both diffusional resistance to escape of water vapor from the stock and thermal resistance to flow of heat into the stock, increase rapidly as the stock dries, but that the latter increases far more rapidly than the former.

5. During the final stage of drying, whether under conditions of exposure to air alone, or, as on drums, with alternate contact with the heating surface and exposure to air, so long as drying conditions are constant, the logarithm of the total moisture content of the stock is linear with the time up until a late stage in the drying operation. In consequence of this fact, the plotting of moisture content against time on semi-logarithmic paper offers a most convenient engineering method of analyzing and interpreting drying data.

6. During the period of constant drying rate, high velocity of the air over the drying surface is an effective means of increasing drying rate and capacity of drying equipment. During the final stage of drying, at progressively decreasing rate as drying proceeds, high air velocity loses its efficacy in increasing rate; but decreasing sheet thickness becomes an important and valuable means of accomplishing the same result.

Estates of Ohio Men Recently Deceased

DAYTON, Ohio, May 3, 1927.—The estate of the late John Gibson, Middletown paper manufacturer, is valued at $204,691.90, according to an inventory and appraisement filed this week in the probate court of Butler county by the American Trust and Savings Bank of Middletown.

The bank was authorized as trustee of the estate to make investments totalling $15,000.

The estate of the late Charles A. Shuler, a member of the firm of Shuler & Benninghoffen, woolen manufacturers, Hamilton, who do a large business with paper concerns is estimated to be valued at $512,809.02 by appraisers the past week.

The personal property is in excess of $384,000; real estate $42,500; securities, $76,411.95 and cash, $9,843.57.

Towns on Great Northern Seek Paper Mills

[FROM OUR REGULAR CORRESPONDENT]

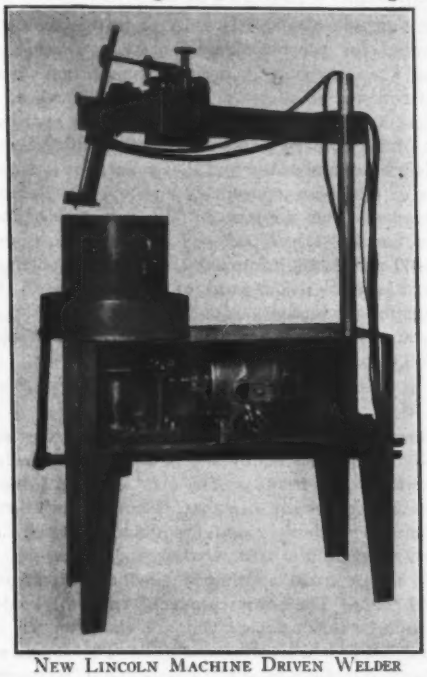
SEATTLE, Wash., April 28, 1927.—Several progressive towns along the Great Northern Railroad having contact with large stands of hemlock, spruce and silver fir, through their commercial organizations are inviting capital to join them in the establishment of the pulp and paper industry in their respective localities.

Through the office of C. R. Berry, forest and power engineers, the report of these activities emanate and it is understood that before the summer is over, two or perhaps three of these prospective industries will have been put under way. Plans for the most part entail the manufacture of ground wood pulp, to be shipped via the railroad to paper mills in the Middle West.

New Arc Welder Makes Welds Under Water

Rapid extension of the field of usefulness of electric arc welding has induced manufacturers of this type of equipment to bring out many new and interesting welding machines. The accompanying illustration showing a new carbon arc welding machine built by the Lincoln Electric Company, Cleveland, Ohio, is an example of one of the latest machines of this type.

The automatic carbon arc welding machines have been found adaptable to welding of pieces in which no preparation of the edges to be welded is made. The machine shown will weld circular seams up to twelve inches in diameter. A particular feature of the machine is the cooling tubs around the revolving table which



NEW LINCOLN MACHINE DRIVEN WELDER

carries the piece being welded. The piece on which the welding is being done may be partially or totally immersed in water during the welding operation. Cooling water is in circulation in the tubs during operation.

The novel cooling arrangement used on this equipment was developed to meet the requirements when welding high grade alloy steels on which the heat disturbance due to application of welding heat must be reduced to a minimum. In the case of 12 per cent manganese steel the welding may be done with the piece totally immersed in water and the arc submerged. This cooling arrangement is well adapted to the welding of manganese steel since the rapid quenching of the molten metal gives it the physical properties expected in 12 per cent manganese steel.

The frame and details of the machine are all made of welded steel construction and the machine itself is an excellent example of the rapidly growing tendency to use welded steel construction in place of gray iron castings.

Tumwater Paper Mills Elect Officers

PORTLAND, Ore., April 29, 1927.—Theodore Osmund of Olympia, Wash., was re-elected president of the Tumwater Paper Mills Company, at the first annual meeting held late in April.

W. H. Trindle of Salem, Ore., was reelected vice-president; R. I. Shepherd was elected secretary-treasurer, succeeding H. S. Giles. W. C. Moore, accountant of the company was made assistant secretary-treasurer.

The board of directors includes President Osmund; vice-president Tindle; H. S. Giles; Virgin Baker; D. McInnes; C. J. Lord and O. M. Green.

Manila Rope Waste for Paper Manufacture*

By Merle B. Shaw [1] and George W. Bicking [2]

An investigation to determine the suitability of manila rope waste for paper manufacture has recently been conducted at the Bureau of Standards. The material employed in the experimental papermaking tests was the refuse fiber from the manufacture of manila cordage at the rope walk of the Boston Navy Yard. The tests were made at the request of the Bureau of Construction and Repair with a view to finding a market for the rope waste of the Navy Department.

Since the amount available is a factor in the commercial value of a material for paper making, inquiry was made as to the amount of waste, in general, derived from manila hemp in the process of cordage manufacture. Owing to the lack of statistical data on the subject, however, definite figures could not be obtained but reports from cordage plants indicate that little, if any, of the material is used commercially and that most of it is burned under the boilers or otherwise unprofitably disposed of. Relative to the quantity available from the source of the test samples, the Bureau of Construction and Repair states: ". . . the Bureau advises that about 200,000 pounds of hemp waste per year is obtained at the Boston Yard from the manufacture of manila cordage." Inasmuch as the quantity produced is doubtless sufficient for commercial consideration it is deemed advisable to publish the results of the investigation as of interest to the paper industry.

Manila Hemp Fiber

1. General

Manila hemp (*Musa textilis*) is obtained from the leaf stalks of a plant of the banana family and is one of the principal products of the Philippine Islands. The fiber is called hemp because of its resemblance to true hemp (*Cannabis sativa*) but is distinguished therefrom by the qualifying prefix, "manila." The fiber is tough and strong and is used primarily for textiles and cordage, that used by the paper maker being obtained almost entirely in the form of old ropes. The papers produced from this material are commonly called "rope" papers and are characterized by great strength, toughness, and wearing qualities. The papers are ordinarily unbleached and are used for shipping tags, wrappers, sacks, etc., in which strength is more important than color.

2. Test Samples

As previously stated the fibrous material employed in the investigation reported herein was the refuse derived in the process of rope manufacture. The material received for the laboratory tests consisted mostly of very fine waste composed of fragments approximately ⅛ to 2 inches in length. The waste for the semi-commercial tests included a much greater proportion of long strands and being larger in quantity was more nearly representative of the rope refuse.

Laboratory Papermaking Tests

1. Equipment

The laboratory equipment employed in the preparation of the pulp and its subsequent conversion into paper consisted of a small cylindrical rotary boiler, ½-pound beater, fiber-sheet mold, sheet press, and drier. For a complete description and photograph of the boiler, which has been found to give excellent results as regards laboratory-scale pulping experiments, the reader is referred to a previously published article.[3] The fiber-sheet mold and press, both of which were constructed at the Bureau of Standards, are also fully described and illustrated in an earlier issue of this journal.[4] The drier consists of a steam-heated cylinder and a carrying felt which covers most of the cylindrical surface. The diameter and the length of the cylinder are 12 and 14 inches, respectively. A steam pressure gauge attached to the drier assists in maintaining uniform temperature.

2. Procedure

a. *Cooking.*—The waste was used as received, without preliminary cleaning or cutting. A number of cooks were made and different digesting agents were used. The materials employed and the cooking conditions were as follows:

Caustic Soda	
Weight of air-dried manila waste	2 pounds
Caustic soda (in terms of Na_2CO_3)	25% (on furnish)
Cooking temperature	340–350 degrees F.
Cooking pressure	135–145 pounds
Time for raising to cooking temperature	1 hour
Duration of cooking at temperature	5 hours
Time for cooling	½ hour
Lime	
Weight of air-dried manila waste	2 pounds
Lime	25% (on furnish)
Cooking temperature	250–260 degrees F.
Cooking pressure	25–30 pounds
Time for raising to cooking temperature	¾ hour
Duration of cooking at temperature	6½ hours
Time for cooling	The stock was allowed to stand in cooking liquor overnight and to cool gradually
Soda Ash	
Lime—Soda Ash	

For these agents the conditions were the same as for lime, except the digesting material, which was 25 per cent of soda ash for the first, and 20 per cent of lime and 5 per cent of soda ash for the second, of these latter cooks.

b. *Paper Making.*—The general method employed to secure uniform sheets on the sheet mold has previously been fully described[4] but the essential features of the procedure, which was followed in the present tests also, briefly stated, are as follows:

Wet pulp is taken from the cooked and washed material and diluted, preparatory to beating. The beating consists only of brushing out the fibers until there are no lumps or knots. After the beating is completed the pulp is removed from the beater and further diluted. The resultant stock is then thoroughly mixed and a sample is taken therefrom for each sheet made.

The weight of cooked pulp is taken and the degree of dilution employed are constant for all sheets. The sample of beaten pulp used is such that the sheet made will be approximately standard basic weight, 60 pounds per 500 sheets 25 by 40 inches in size, the exact weight depending on the shrinkage of the sheet. Direct comparison of the sheets from the mold can, therefore, be made.

A beater of papermaking stock was prepared from each of the cooks of rope waste. Strength being the chief factor and color and cleanliness of less importance, no attempt was made to bleach the fiber. The sheets made from the stock were submitted to the various physical tests applied in evaluation of the paper.

3. Test Results

The yield of pulp from the different cooks was: caustic soda cook, 35.4 per cent; lime, 58.3 per cent; soda ash, 46.6 per cent; and lime—soda ash, 63 per cent. These values are percentages, by weight, of bonedry pulp based on air-dried waste. The yields should be considered as only approximate since but one cook was made by each process.

The data on the physical properties of the paper made are given in Table 1 and are for the waterleaf sheet (paper without the addition of sizing to render it resistant to moisture). Similar measurements on sulphite woodpulp sheets are included for comparative purposes. The measurements in each case have been converted to a 60-pound weight basis to facilitate comparison.

To be conclusive the results obtained in the laboratory need to be confirmed by paper machine tests. The laboratory tests indicate, however, that as to yield of pulp and quality of paper produced manila waste does not compare favorably with old rope fiber but is somewhat superior to sulphite wood pulp; also that the commonly used cooking processes are satisfactory for converting the waste into papermaking pulp.

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* Published by permission of the Director of the National Bureau of Standards of the U. S. Department of Commerce.

[1] Paper Technologist, Bureau of Standards.

[2] Paper Maker, Bureau of Standards.

[3] "Caroa Fiber as a Paper-making Material," by Merle B. Shaw and Raymond R. Rumsey; Paper Trade Journal, Vol. 80, No. 2, pp. 47-49, Jan. 8, 1925. Tech. Assoc. Papers, series 8 (1925), pp. 107-109.

[4] "Method of Making Uniform Fiber Sheets for Test Purposes," by Merle B. Shaw and George W. Bicking; Paper Trade Journal, Vol. 79, No. 21, pp. 51-53, Nov. 20, 1924.

TABLE 1
DATA ON FINISHED PAPER OF LABORATORY TESTS

Material	Weight, 25x40 in.—500 sheets	Bursting strength	Ratio of bursting strength to weight, 25x40—500	Tensile strength: Long direction [1]	Tensile strength: Short direction [1]	Tearing strength: Long direction	Tearing strength: Short direction
	lb.	pts.	%	kg.	kg.	g.	g.
Manila waste —caustic soda cook	60	35.8	59.7	4.9	4.8	100.0	109.5
—lime cook	60	21.2	35.3	2.3	2.5	106.0	104.0
—lime cook	60	21.2	35.3	2.3	2.5	106.0	104.0
—soda ash cook	60	39.0	65.0	4.5	5.3	140.0	174.5
—lime—soda ash cook	60	29.2	48.6	3.5	2.9	136.0	136.5
Sulphite wood pulp [2]	60	23.3	38.8	9.8	9.8	65.8	67.2

[1] Sample taken from sheet (as formed on the sheet mold) in direction indicated.
[2] Bleached.

Semicommercial Papermaking Tests

For commercial interpretation and comparison results obtained by practical mill tests also are desired. Such tests were made, therefore, in the experimental paper mill of the Bureau and are described in the following.

1. Equipment

The Paper Section of the Bureau of Standards is equipped for making paper in a semicommercial way under practical mill conditions. The experimental equipment employed for the work on manila waste was that in general use in the Bureau mill and consisted of a rotary boiler, a 50-pound wood tub beater (with manganese-bronze bars and plate) equipped with a washing cylinder, a small jordan (with iron bars), a 4-plate screen, and a 29-inch fourdrinier papermaking machine (with wire 33 feet long and having two presses, nine 15-inch driers, a small machine stack of seven rolls, and a reel).[3]

2. Procedure

(a) *Caustic Soda Cook.*—A cook was made with caustic soda, the amount used being 29 per cent, based on the air-dry waste. The cooking time was 8 hours and the temperature 260 to 300 degrees Fahr. When removed from the boiler the pulp contained oil, which, since it apparently did not saponify, was evidently a mineral oil.[4] During the subsequent washing operation on one-half of the cooked pulp the wire of the washing cylinder became coated with oil which required steaming for its removal. The washed pulp was then beaten and converted into paper. No difficulties were encountered in the beating or the operation of the papermachine.

The remaining half of the pulp from the cook was recooked with 15 per cent of lime. The duration of the latter cooking was 6½ hours and the temperature 290 to 300 degrees Fahr. The resultant pulp was still oily and difficulty similar to that described above was experienced in the washing, but as with the first lot the prepared stock gave no trouble on the papermachine.

(b) *Soda Ash and Clay Cook.*—Soda ash and clay, 27.5 and 5.5 per cent, respectively, were used in the next boiling. The cooking time was 13¾ hours, the temperature 300 to 310 degrees Fahr. It was thought that the clay might form with the oil an emulsion which could be removed in the washing operation. The cooked pulp appeared to be less oily and washed fairly well but the wire of the washing cylinder still had to be steamed out.

(c) *Soda Ash Cook.*—One lot of waste was given two successive boilings with 15 per cent of soda ash. The cooking time for each was 7 hours and the temperature 290 to 300 degrees Fahr. After the completion of the first boiling, the liquor was allowed to drain off, fresh soda ash (15 per cent) and water were added, and the second boiling was given. In washing the pulp difficulty similar to that described for the preceding cooks was encountered, but as before no trouble was experienced in running the stock over the papermachine.

3. Test Results

The yield of bonedry pulp, based on airdry furnish, from the different cooks was: caustic soda, 42 per cent; soda ash and clay, 52 per cent; and soda ash—soda ash (after second boiling), 47 per cent.

Measurements on the finished paper are given in Table 2. Similar data for sulphite writing and kraft and rope wrapping papers are included for comparison. Practically all test data available at the Bureau for rope papers are for comparatively heavy papers only. In order to include rope paper in the table, measurements of some of the physical properties were determined for a sample taken from paper made in an earlier investigation (1921). This fact will need to be considered when comparing the values given.

It will be observed that the paper made in the first run is thinner and lighter in weight than that of the other tests. When only a small quantity of stock is available, or when the run is the first for a kind of fiber different from that of the preceding work, the duration of the run may not be sufficient to permit the machine regulation necessary to obtain a sheet of the desired weight. The first run on rope waste was made under these conditions but it was deemed desirable, nevertheless, to include in the report the measurements on the finished paper. Soda ash was the digesting agent that gave best results. A good yield of unbleached fiber was obtained in the soda ash cooks and the paper made therefrom was stronger than that made from the pulps of the other cooks. The measurements on the papers show rope waste to be inferior to kraft or rope stock but considerably better than bleached sulphite wood pulp. The strength of the sulphite wood pulp employed in the tests was known to be exceptionally high, however, and was doubtless equal to that of the unbleached sulphite pulps commonly used for wrapping papers.

Chemical Tests

The waste was impregnated with oil which had probably been distributed over the manila hemp to soften and lubricate the material in order to facilitate straightening out the fibers in the rope making. The amount of oil in the waste, determined by extraction, was found to be 14.2 per cent for the material employed in the laboratory tests and 20.3 per cent for that of the semicommercial work.[7]

Inasmuch as oil is objectionable in material used for paper manufacture, its extraction from the rope waste prior to the pulping operations would increase the value of the fiber for papermaking

[3] Photographs of the beater, jordan, and fourdrinier machine are shown in B. S. Tech. Paper No. 262, pp. 340-341.
[4] Information obtained later from the source of sample gave the oil used at the rope walk as 90 per cent light colored mineral and 10 per cent wool olein.
[7] The determinations were made by the Chemistry Division of the Bureau.

TABLE 2
MEASUREMENTS ON FINISHED PAPER OF SEMICOMMERCIAL TESTS
Physical Tests

	Weight, 25x40 in.—500 sheets	Bursting strength	Ratio of bursting strength to weight, 25x40—500	Thickness	Folding endurance: Machine direction Double	Folding endurance: Cross direction Double	Tensile strength: Machine direction	Tensile strength: Cross direction	Tearing strength: Machine direction	Tearing strength: Cross direction	Degree sized [4]: Indicator method	Degree sized [4]: Curl method
Caustic soda—	lb.	pts.	%	in.	folds	folds	kg.	kg	g.	g.	sec.	sec.
Half of cook	38.0	24.3	63.8	0.0026	1025	250	5.4	2.7	40	37	18	...[5]
Half of cook [1]	51.8	25.2	48.7	.0035	680	215	7.5	3.8	67	71	41	33.8
Soda ash (with clay)	55.6	27.2	48.9	.0040	990	475	6.6	3.6	111	114	49	43.5
Soda ash (cooked twice)	55.5	30.3	54.5	.0038	950	545	6.6	4.0	115	114	49	43.4
Sulphite writing [2&3]	54.3	32.2	59.3	.0037	855	545	..	..	61	54	25	22.6
Kraft wrapping [3]	55.8	55.1	98.7	.0041	3428	3045	..	..	107	93	24	19.7
Rope wrapping [3]	66.0	52.0	78.8	.0046	1990	1125	9.3	5.4	...	..	..	...

[1] This portion recooked with 15 per cent of lime.
[2] Bleached.
[3] Measurements on sulphite, kraft and rope papers are included as a basis for comparison.
[4] For papers of the thickness of these samples, values of 18 to 20 seconds indicate a well-sized sheet.
[5] Light weight and thinness of sample (see text) caused paper to curl into a coil. Accurate reading when curl started to uncoil not obtainable.

use. The papers made in the tests contained from 2 to 10 per cent of oil and would therefore not be satisfactory for uses in which the presence of oil is objectionable. The oil content of the papers varied with the severity of the cooking treatment given the fiber, the pulp prepared by the caustic soda process containing, of course, the smaller amounts.

Laboratory and semicommercial papermaking tests indicate that the waste received from manila hemp in the process of rope manufacture is worthy of consideration as a papermaking material. The pulp obtained from the waste does not approach old rope stock in value but is stronger, and would doubtless be more durable, therefore, than sulphite wood pulp.

The soda ash cooking process gave the most satisfactory results as to yield of fiber and quality of paper produced.

The waste as received is impregnated with oil used in the rope manufacturing processes. The oil causes some difficulty in the preparation of the papermaking stock and is not all removed in the pulping operation, part of it remaining in the finished paper. The papermaking value of the waste would doubtless be increased if the oil were extracted prior to the pulping operation.

Effect of Grain Direction in Lithography

SPECIAL INQUIRY NO. 72

A member writes: "You will oblige me very much indeed if you will have the kindness to circularize amongst the members the following inquiry with regard to coated papers.

"Body paper for coating is being run the narrow way of the sheet on the paper machine, viz., a sheet 30 x 40 inches is run the 30 inch way between the deckles, and fed into the printing press the 40 inch way.

"This, of course, is the usual practice when making paper for coating and is based on the assumption that the paper stretches least in the machine direction and most in the cross direction. If the paper was made the 40 inch way between the deckles, and fed into the printing press the same way and provided due care was paid to the calendering and maturing of the paper after coating, at the same time assuming that the lithographer seasons the paper in the printing room before using, would this method of making the sheet influence in any degree the printing for fine register work?

"Taking into account the thorough wetting the paper gets in the bath of pigment, the subsequent drying, and the fairly heavy calendering, it would seem that hardly any stretch should be left.

"Has any member had any similar experience or trouble with coated papers?

"The furnish of the stock is about 50 per cent sulphite pulp, 35 per cent soda, 15 per cent broke, and 30 per cent china clay; rosin sized, but not hard sized, and beaten moderately 'free.'"

As this inquiry is of interest equally to manufacturers of coated paper and lithographers, it is hoped that a full discussion of the questions will be forthcoming.

A transcript of the responses in blank will be distributed to all who contribute to it.

Send replies to

W. G. MACNAUGHTON, Secretary of TAPPI,
18 E. 41st street, New York.

From Evergreen to Evergreen

An attractive booklet, profusely illustrated, entitled "From Evergreen to Evergreen," has been published by the Hoberg Paper and Fibre Company, manufacturers of pulp and paper products, of Green Bay, Wis.

This valuable work contains a brief history of the paper industry, together with a detailed account of the mechanical processes used in the production of Evergreen papers.

While the brochure does not pretend to set forth all the facts about Evergreen papers and their production, it does, however, convey to the reader some idea of the care and effort which marks their making.

Hanging Pulpstones

SPECIAL INQUIRY NO. 71

"During the past two or three years we have had considerable trouble in the way of pulpstone explosions, and have about come to the conclusion that our method of hanging pulpstones is not all that it should be.

"We are using four-pocket International grinders, both motor driven and direct connected to water wheels, the size of the pulp stone being 27 x 60 inches. We cement the stone to the shaft and use basswood veneer lagging between the flange and the stone. One flange on each stone is equipped with a bronze bushing while the other flange is plain, and we have lately considered using bronze bushing in both flanges. The stones are not trued up until they are put into the grinder. It is our opinion that from last year's experience, we might do a better job in hanging the pulp stones without the use of cement, but some of our neighboring mills disagree with us.

"We shall appreciate very greatly any information that you might be able to give us on this subject."

I have written that cementing the stone to the shaft by pouring cement grout in the eye surrounding the shaft is the cause of the stone breakage in my opinion. Not only does the cement expand as it sets but will do so still more as it is heated in grinding. In addition there will be the expansion of the shaft due to heat.

While this opinion is not based on tests it would seem reasonable, particularly if the breakages were invariably in a radial direction from the shaft to the stone periphery.

As the methods of hanging pulp stones vary quite widely, particularly to enable the stone to be removed without breaking them when they are worn down, this is published as a special inquiry. It is hoped there will be a full discussion of the method in use, as well as the specific question. Reference is made to Manufacture of Pulp and Paper, volume III, sec. 3, pp. 19 and 20.

The special report containing a transcript of the responses in blank will be prepared about May 10 and sent to those who have contributed to it.

Send replies to

W. G. MACNAUGHTON, Secretary of TAPPI,
18 East 41st street, New York.

Pulp Demand Satisfactory at Helsingfors

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., April 26, 1927.—The turnover in chemical pulp is considered satisfactory for this time of year, says a report to the Department of Commerce from Helsingfors, which further states that sales are being made at declining prices. During the second half of March quotations on all classes of pulp, with the exception of prime quality bleached sulphite, underwent reductions, recent prices varying from approximately $2.50 to $2.60 per 100 pounds for strong sulphites and strong sulphates to $2.73 to $2.85 for easy bleaching sulphite and $3.28 to $3.70 for bleached sulphite. Dry mechanical pulp, first quality, at the same time was quoted at $26.75 to $30.40 per short ton and newsprint paper at $62 per short ton.

Paper Index Number Lower

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., May 3, 1927.—The March index number for paper production was 117 compared with 106 for February and 127 for March of last year taking 1919 at 100 per cent according to the Department of Commerce.

Brown Co. in Larger Quarters in Pittsburgh

[FROM OUR REGULAR CORRESPONDENT]

PITTSBURGH, Pa., May 2, 1925.—Due to an increase in its products and the expansion of its office business and personnel, the Brown Company has removed to more commodious quarters. The new address of the company is 1626 Oliver Building.

Section of the

COST ASSOCIATION OF THE PAPER INDUSTRY

Affiliated with

THE AMERICAN PAPER AND PULP ASSOCIATION

Conducted by THOS. J. BURKE, C.A., Sec-Treas

What Facts Should Borrower Set Forth in His Financial Statement?*

Joseph L. Morris, Former President of Robert Morris Associates, says conservative bank credit officer must obtain from borrowing customer:

1—Detailed Balance Sheet, showing all assets and all direct contingent liabilities.

2—Profit and Loss Statement, showing, in sufficient detail for a full understanding, the result of operations for the period, and a complete reconciliation of the net worth or surplus account.

3—Text and Comments amply comprehensive to enable the banker properly to analyze and value the figures. A frank recital of whether or not the various items were actually verified, or if merely tested, what tests were made. If the report is the result of only a balance sheet audit, without full verification, that fact should be plainly stated and the reasons for not proceeding further given.

4—Signed Certificate by the accountant, with any qualifications set out so clearly that they will be appreciated, even in a most hurried reading. The accountant's report should also bear the signature of the client, the bank's borrower, without which he is not legally bound by any part of the report, including the statement.—THE EDITOR.]

Up and down the land, bankers, public accountants, and business men are making a concerted effort to arrive at a common understanding as to what the bank credit officer, the grantor of loans, should require of prospective borrowers, in the way of financial statements and reports on which to base the bank's judgment as to whether loans should be made, and if so, to what extent.

Much progress was made during the year past in clarifying the air, and in reaching definite conclusions as to the needs and wishes of all persons concerned. The banker seeks only sound information and facts, in order to form a conclusion as to loans without too great study and research; the customer, or prospective borrower, seeks a simple, effective, and economical form of presenting the real facts as to the financial status, needs, and operating results of his business; the public accountant, as the servant of both banker and borrower, and as the one charged with the responsibility of discovering the facts and of presenting them briefly but comprehensively, seeks a form and operating method that will meet the requirements of both banker and borrower.

Few problems of greater import, few studies having a greater bearing on the methodical conduct of business, confront the business and financial world. That this condition is recognized is evidenced by the continuing efforts of many organizations of public accountants to evolve a uniform practice that will be acceptable to all the interests involved; and by the whole-hearted co-operation that is being given by bankers, through their national, state, and local organizations, to the study of the various phases of this problem.

Definite forms of procedure are beginning to be evolved from these studies. The past year has been marked by the presentation to the business world of concrete programs and methods that are of great value to the public accountant. Bankers have expressed well defined opinions, following conferences with accountants and with business men, and from it all there is growing up a practice that it is believed will in time be adopted generally.

Bankers and Accountants Confer

As an instance of the spirit of co-operation between bankers and public accountants in this matter, there may be cited the conferences that are being conducted monthly in Jacksonville, Florida, between credit managers of the national banks and a committee of the Florida Society of Certified Public Accountants.

Walter Mucklow, president of the Florida society, is chairman of the committee representing the society. The accountants of Florida report that they met with a cordial reception when they approached the presidents of the national banks and suggested that it would be to their mutual benefit if the bankers and accountants could come to a common understanding as to what constitutes a proper report, and as to the value of attached certificates. The series of monthly conferences resulted. Two such conferences have been held. Mr. Mucklow says concerning them:

"The two meetings which have been held have been most enthusiastic and we have agreed upon a number of suggestions which members of the society are asked to adopt. I hope that in the course of two or three more meetings we may solidify these suggestions, and apply them to one or two typical reports, sending a copy of this consolidated memorandum to the banks in Florida and to the members of the society."

Mr. Mucklow adds that the objects of the conferences are similar to those of the committee of the American Institute of Accountants which confers with a committee of the Robert Morris Associates, and makes the comment that the results achieved by the committee of the Institute and of the Robert Morris Associates are not known to the distant accountant, who is thus compelled to work out his own program.

"I think that much of the work must be done locally," says Mr. Mucklow.

Joseph L. Morris, a former president of the Robert Morris Associates, threw additional light on what bankers have in mind

* From The American Accountant.

as to the minimum requirements to be asked of prospective borrowers, when he addressed the New York Society of Certified Public Accountants at its all-day conference, at the Waldorf-Astoria Hotel, New York. Mr. Morris is vice-president of the Manufacturers' Trust Company, New York.

Takes Professional Rules as Text

Mr. Morris took as his text Rules Nos. 1, 2, and 3 of the New York State Society's rules of professional conduct, which read:

"1—The members of the society should carry on their work in a spirit of fairness and justice to their clients and the public.

"2—No member should prepare or certify any statement containing an essential misstatement of fact, or omitting such a fact as would amount to an essential mis-statement or would result in a failure to put prospective investors, creditors or others on notice in respect to a material fact not specifically shown in such statements.

"3—No member should certify to accounts or statements which have not been verified entirely under the supervision of himself or other person representing him. . . ."

Mr. Morris pointed out that, not so very long ago, it was the exception rather than the rule for the credit grantor to receive a financial statement of any kind as a basis for credit, and that, in contrast to this, it is now the rule and almost universal practice, at least for the banker, to insist on a financial statement, and whenever possible, a certified statement or public accountant's report, with an increasing tendency toward the latter.

The formula given was referred to as quite elementary. He expressed the belief that it should not be necessary to demonstrate that the banker is entitled to it.

"Please bear in mind," he said, "that he gives up in exchange for the borrower's unsecured promissory note, cash or its equivalent credit, and that at best his margin of profit is small. He is constantly conscious of the fact that it takes the interest on many notes to offset the loss of the principal of one. Because of this fact, the conservative banker realizes that he can not be too careful in judging the credit risk involved, even in the best secured loan, and that he must proceed with his eyes open, not only having full knowledge of its merits but also its weaknesses. It may occur to you now and then that the banker is perhaps too exacting in his demands for information, facts, and figures, but please sympathize with the difficulties of his problem.

Bankers Everywhere Rely on Public Accountants

"It is only fair to say that bankers, as a class, have done more than any others to create the present large demand for the services of public accountants. Hardly a day goes by when the busy loaning officer does not find an opportunity to suggest to a borrower, or prospective borrower, that the report of a public accountant is necessary or desirable. I believe you will concede without much hesitation that the banker is your best salesman.

"Assuming that you agree with this proposition, will you not also agree that the time has arrived to educate your client to an appreciation of the fact that you will be best promoting his interests, if he will permit you to call on his banks in advance of an audit, for the purpose of finding out from them what special information they feel the need of for a better understanding of your client's position, or for the removal of doubts regarding it? By the same token, your client should permit you to discuss the completed report with his banks. After all, the banker is literally the ultimate consumer of the report you produce, and little or nothing is gained unless your report impresses him as adequate.

Confusion Is Created by Variety of Purposes

"Rather than discuss with you at great length the question of the public accountant's technique and physical methods, I believe I can serve you better by pointing out certain intangibles involved in the work of the public accountant as they appear to the bank credit man. Please remember that the banker's problem is not simplified by the fact that financial statements are designed not only for credit purposes, but also for tax purposes, investment purposes, and sometimes for the private use of the individual, firm or corporation owning the business. This variety of design creates confusion, because it is not always possible, under the circumstances, for the banker to know with any degree of surety what these figures placed before him really mean.

"The banker is also puzzled because there is a fundamental question to which he can frequently find no answer. That question is, what is the attitude of the public accountant? Is he an advocate for his client, engaged to put his client's best foot forward; or is he what he should be, a sort of combination camera man and engineer, who realizes that despite the source of his fee, it is his duty to gather facts and figures which give a complete picture strictly in accordance with the truth, the whole truth and nothing but the truth, 'in a spirit of fairness and justice to their clients and the public'?

"It should be said to the credit of the public accountant, that we have all seen innumerable reports, accompanied by unqualified certificates, which have impressed us forcibly with the fact that the accountant appreciated and realized his whole duty and had, therefore, presented a set of figures accompanied by explanatory text which completely met the needs of the banker. Such reports have not only enhanced the standing of the client with the bank, but have also impressed the banker with the fact that the accountant not only knew his business, but also his duty, and had approached the task with a professional attitude which meant a degree of thoroughness, not necessarily governed by the size of the fee and the instructions of his clients.

Picture Taken in Dim Light

"On the other hand, many of us have seen public accountants' reports which on the surface appeared to be complete, but when dissected and analyzed showed unmistakably that the picture was taken in a very dim light. Such reports, lacking essential detail but not always appearing to lack half truths, gave the impression of deception and concealment, to the detriment of both the accountant and his client. I have no doubt that not many such cases were deliberately intended to be deceptive, but allowing for the purest of motives, the effect is the same.

"There seems to prevail, particularly among the younger men of your profession, a belief that when the name of any prominent accountant who is known to have a large practice is attached to a certificate, the report is accepted universally and without question by bank credit men and, inversely, when the name of any less prominent accountant is attached to a certificate, the report is despised and rejected. This means, in other words, that some of you think the bank credit man is overawed by mere size and regard it as synonymous with all the virtues, and that because an accountant's name is unfamiliar, his work, per se, is not dependable.

"It goes without saying, that this ridiculous and unfair situation does not exist. Nevertheless, it is true, that all things being equal, it is perfectly natural for the banker to allow for the fact that an accountant with whom he has had contact is more than a name, and readily acceptable or not, regardless of the accountant's size or prominence, according to what the banker knows of his ability and dependability.

Accountants Should Make Themselves Known

"Within the last few days a business man presented to me, what in my judgment is a complete and competent report accompanied by an unqualified certificate signed by a certified public accountant whose name I had never heard before. This business man, who is an active borrower at several banks, told me rather indignantly that it had been suggested to him that his present accountant be replaced by one better known. The very adequate character of the report and the apparent appreciation on the part of the accountant that his duty extended beyond his client, impressed me

so favorably that, without having met the accountant myself, I told our customer that so far as we were concerned there was no occasion for making the change. I did, however, take advantage of the opportunity to suggest that the accountant make himself known to the banks by calling on them. This particular case emphasizes the need of establishing such contacts.

"Incidentally, our customer told me that his present accountant, who is a young man, charges a fee which is in keeping with the capital and volume of the business and he could see no good reason for changing to an accountant who, although better known, is no better qualified and no more capable, in fact, one who would probably delegate the assignment to a minor subordinate and perhaps produce an inferior report.

"We often wonder if public accountants, particularly those with large practices requiring large organizations, have not allowed their practices to become too impersonal. Frequently business men complain that too many audits are turned over by public accountants to assistants, some of limited experience, with the personal touch of the partners of these accountants' firms largely, if not wholly, lacking. This suggests the necessity for getting back to first principles by placing definite responsibility for each audit on a specific partner, whose individual signature should appear on the certificate, along with the signature of his firm.

"If I appear to have been severely frank, please lay this to my desire to help you comprehend the problem as seen from the banker's point of view. Assume that the bank credit man is cooperative, make it your business to become acquainted with him, and I am sure that your problem and his will ultimately be one."

A progress report was presented by the committee on co-operation with bankers of the American Institute of Accountants, at its annual meeting in September, 1926, detailing the results of conferences with a committee of the Robert Morris Associates, and with the committee of co-operation with bankers of the New York State Society of Certified Public Accountants. No action was taken on the report of the American Institute's committee. It was merely received and accepted. Before action is taken by the American Institute there will be available to it and to others interested in this subject, the definite proposals evolved from such conferences as those held in Florida and in other states, proposals which may well be taken into consideration in preparing a uniform or standard system of preparing and certifying to financial statements for bank credit purposes.

Two reports of suggestions adopted as a result of conferences held in Jacksonville, Florida, are available. They are presented here:

Points Agreed on by Committees

"The special committee (of the Society of C. P. A.'s in Florida) appointed to confer with representatives of the Jacksonville banks, met with Messrs. Norris, Schwable and Stevenson on Tuesday, October 19, 1926.

"Discussion was had on various matters relating to accountants' reports, and the following suggestions were unanimously approved:

"1—That members of the society should invariably render their reports in the recognized form, including statements and comments, enclosed in a cover, and that bankers will ask for such complete reports and, so far as possible, will decline to accept copies of the balance sheet or any other statements detached from the comments.

"2—That members will invariably attach on the balance sheet or in the comments or letter of transmittal, a certificate indicating any reference to the accompanying comments which may be necessary.

"The bankers prefer that this certificate contain an expression of the accountant's opinion as to the correctness of the statements and the absence of such an expression will be taken as an indication that the accountant assumes no responsibility.

"3—Members will adopt the uniform size of 11"x8½" for all reports, as soon as present supplies are consumed.

"4—Members will include, whenever practicable a short description of the scope of the examination, apart from, and in addition to, the regular comments.

"5—Members will always give, when possible, an analysis of the surplus accounts so that they may be compared and reconciled with the figures shown in previous reports.

"6—In stating fixed assets, members will always endeavor to show the following items separately and at cost: land; buildings; equipment; deducting from each item the amount of depreciation reserve."

"At a joint meeting held on November 16, 1926, the following suggestions were unanimously approved:

"1—*Assets:* In the case of notes or accounts receivable, for which a reserve is set up, and of capital assets, such as buildings and equipment of all kinds, the balance sheet should show the total debit appearing on the ledger, and the amount set up as a reserve for bad debts or for depreciation, should also be shown and deducted therefrom, carrying the net amount to the total column. "Each class of equipment should be shown separately on the balance-sheet or in an accompanying schedule.

"2—*Receivables:* When reporting accounts receivable it is advisable and convenient to 'age' them and to state in the comments the percentage of each class, e.g.,

Under 30 days	40%
Under 90 days	20%
Under 6 months	15%
Over 6 months	25%

"3—*Liabilities:* The liability side of the Balance Sheet should be divided into three parts,

Liabilities
Reserves
Net Worth

"4—*Contingent Liabilities:* Every Balance Sheet should carry a footnote stating that the accountant has looked for contingent liabilities and has not found any (or finds such liabilities amounting to $.....) as the case may be.

"5—Liabilities shall be divided between 'Current' and 'Deferred.' The former shall include all liabilities such as bonds, mortgages, notes or accounts falling due within one year from the date of the balance sheet.

"6—The items accounts payable and notes payable should always show if they are 'trade' accounts or are due to officers, stockholders or employees; items of the latter class should be shown separately.

"7—Accrued taxes and accrued interest should be included in current liabilities.

"8—Reserves for unrealized profits should be shown in a total by themselves, after all liabilities and just ahead of the net worth.

"9—Where interest has been included in the amount shown for any asset, and a reserve set up therefore, the amount of this reserve shall be deducted from the asset, rather than shown on the liability side.

"10—*Capital Stock:* There should always be shown the following three items:

Capital Stock Authorized	
Unissued	$
Treasury	$
Outstanding	$

"A separate statement should be made for each class of stock where more than one exists.

"11—Reports should always be accompanied by a profit and loss account.

"12—Every report should be firmly bradded together and all pages should be numbered serially so as to indicate clearly if pages are abstracted. It has been a not unknown practice for clients to detach a balance sheet from its accompanying statements and send it alone to bankers."

COST SECTION

Personal Element Must Be Considered in Cost Accounting*

Does the business executive know what the figures given to him by the cost accountant mean?

Mr. Sweetser is one business executive who seriously questions whether he does; and he puts the blame on the cost accountants, who, he says, should make their tables and statistical information so interesting as to arouse enthusiasm.

It seems a big undertaking, but if cost accountants can let executives see at a glance when and wherein costs are varying from standards, they will have gone a long way toward their goal.

"Take the personal element in consideration; humanize your accounts," says Mr. Sweetser.—THE EDITOR.

Make Tables and Figures Attractive

The vice-president of the National Association of Cost Accountants urges cost accountants to humanize their accounts.

Not only that, but he asks them to make their figures and tables so attractive that they will arouse enthusiasm.

F. L. Sweetser, of Poughkeepsie, N. Y., an officer of the Dutchess Manufacturing Company, is the one who put forward his ambitious program when he addressed the public accountants, both certified and non-certified, of Maryland, at their annual get-together dinner in Baltimore, December 14, last.

"Accountants and system men usually do not give sufficient recognition to the personal element," said Mr. Sweetser. "The object of information should be to arouse enthusiasm in the organization.

"Men dealing with figures have an opportunity of which they rarely make use. They send a lot of figures along to the executive and let it go at that. They don't even bring them to him—they send them. And half the time the executive doesn't know what they mean. He puts up a bluff, but he doesn't know, just the same.

"Our president, Mrs. Hull, taught me these things. When I came to Poughkeepsie, I was just an accountant. Well, she told me where I got off. She taught me that whenever you want to get anything done, you have to get the people with you. And she says that any business transaction is possible without disagreeable incidents arising.

An Absolute Necessity

"One thing that is absolutely necessary, is that the plans of your accounting costs be so arranged that the manager can put his finger on the fellow who is doing what he ought, or on the fellow who is not doing what he ought.

"What is cost accounting for, anyway? It is to make everybody in the organization think. They can't think about something unless they know about it, and the cost accounting people have to tell them the facts. We want all our employees to *think* about costs, and not just throw costs into a department.

"Knowledge of standard costs is very important to the executive. And it's not the costs themselves that are the important thing so much as it is the variation from the standards.

"The presence of a cost system itself won't settle anything. It takes people to do that. Pride is a fruitful source of action. A great part of the accountant's work is to arouse it. "In our plant we charge all costs by departments. We have interested all our employees in keeping down costs as much as they can. The other day I saw one of our women employees driving tacks with a small hammer. 'Where did you get that hammer? I asked, 'In the ten-cent store,' she replied. 'Why should I get the carpenter to drive them at $1.25 an hour when I can do it myself?'

"Tell your people what your figures mean in relation to the things they're interested in. Don't talk to the power engineer about the cost of coal—talk to him about the use of it. Tell the purchasing agent about the price, but tell the foreman about the economical use of supplies.

Basis for Cooperation

"This will give a basis for co-operation and you'll be surprised how you will save We saved $12,000 the first year by following the system outlined above.

"The manager prods everybody; it's your job to prod the manager. Tell him something every morning so he can start the day right.

"Hope is one of the greatest enemies of business. Many people hope everything is going to come out all right. They're not so anxious to know. It's up to the cost accountant to let the manager know what he ought to know.

"Keep in touch with what is going on outside your own city, state, and organization. Keep up with what progress is being made in other fields.

"Remember that the usual manager just hates your accounts. He reads them because he has to. But humanize them for a time, bring out the vital facts in a interesting way, and watch the results. You'll find that a procedure of this kind pays.'

* From The American Accountant.

East Hartford Manufacturing Co.

East Hartford Manufacturing Company for sixty-five years producers of the highest grades of bonds, ledgers, and high grade specialties, has recently brought in additional working capital and has added to its executive personnel, Freeland Jewett, of Boston. Mr. Jewett was, until recently, president of the Eastern Magnesia Talc Company and enjoys a wide acquaintance in business and financial circles both in Boston and New York.

At a recent directors' meeting Mr. Jewett was chosen president of the company; F. C. Clark, vice-president and directly in charge of sales; R. S. Hatch is treasurer, and in charge of manufacturing.

Mr. Clark is well known for his work with the Bureau of Standards at Washington, D. C., where he made wide acquaintance, both in manufacturing and consuming trade. Mr. Clark has an intimate knowledge of both the manufacture and use of high grade papers and his experience fits him very well indeed to give the highest type of service to the many customers that the company has served through its many years of manufacturing.

Mr. Hatch is well known in paper manufacturing circles and has had a wide experience in the manufacturing of quality papers of various grades.

Mr. Jewett will devote a large part of his time to the business administration and sales policy of the company. Many improvements have been made in mechanical equipment and the company is now prepared to turn out a better high quality product. They will make a specialty of Charter Oak and Pequot Bonds and of East Hartford Ledger all of which grades have been well and favorably known for many years.

Swedish Chemical Pulp Shows Decline

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., May 3, 1927.—Quotations in all classes of Swedish chemical pulps underwent a decrease of approximately $1.20 per short ton, with the exception of bleached sulphite which dropped about $4.86 per short ton, in the minimum price during the second half of March according to word received by the Department of Commerce. No changes occurred in prices quoted on mechanical pulp, news print, or kraft and M. G. sulphite papers.

THIS BRAND IDENTIFIES THE BEST SOUTHERN KRAFT

Reg. U. S. Pat. Off.

Consumers prefer Gator Hide Southern Kraft

because of its attractive brownish color — its toughness — its resistance to dampness — its neat appearance—and its smoothness combined with durability.

INTERNATIONAL PAPER CO.

EXECUTIVE AND MAIN SALES OFFICE:
100 East 42nd Street New York City

Sales Offices in
Boston Chicago Atlanta Pittsburgh Philadelphia

new and revolutionary Beating System

Increases the output of a beater a little over three times. . . . . Cuts the investment approximately two-thirds on beater room space. . . . . Reduces friction, lubrication and power costs tremendously. . . . .

In one installation where this beating system was put in operation, the machine capacity was increased from 40 to approximately 55 tons of finished paper per day. The old beaters were turning out 1,400 pounds per beater in 2½ to 3 hours, now they are beating 4,600 pounds in 1 to 1½ hours. An increase of stock per square foot of floor space from 2½ to 3 pounds to approximately 20 pounds. In addition, this mill has been able to make a new grade of product testing from 15 to 18% higher in Mullen and Tear than before.

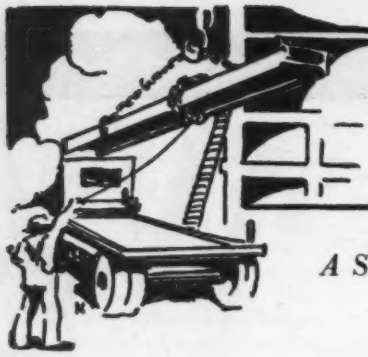
Seven additional beaters are now being rebuilt and installed on the basis of this remarkable performance. This beating system which was designed by an experienced paper mill executive in collaboration with our engineering department, has many exclusive features besides increased capacity.

It is possible to convert a 1,400 pound beater to one of these 4,600 pound new high density, high capacity beaters in from 12 to 15 days.

If you are contemplating the rebuilding of old beaters, or the installation of new, do not fail to write immediately.

The NOBLE & WOOD MACHINE CO.

HOOSICK FALLS, NEW YORK



CONSTRUCTION NEWS

A Summary of Vital Facts Regarding Construction, Finances and Operation of Paper Mills

Construction News

Dunkirk, N. Y.—The Warder Paper Box Company, West Third street, is arranging for the construction of its proposed new plant on Courtney street, between Railroad avenue and Buckner street, for which bids have been received on general contract. It will be two-story, estimated to cost close to $50,000, including equipment. Chester R. Phelps, Gluck Building, Niagara Falls, is architect. James H. Warder is president.

Cloquet, Minn.—The Northwest Paper Company has preliminary plans under way for the construction of a new sulphite pulp mill at its local plant, reported to cost more than $85,000, with equipment. It is proposed to proceed with erection during the summer. The Jacobson Engineering Company, North West National Life Building, Minneapolis, Minn., is engineer.

Salisbury Mills, N. Y.—The Universal Crepe and Tissue Mills, Inc., has been incorporated under state laws, with capital of $900,000, to take over and expand the company of same name with local mill. The new organization is chartered to manufacture paper goods of various kinds, as well as paper byproducts. The incorporators are Irving Workman, Roy W. Spencer and Samuel Sall. New York headquarters are at 45 West Forty-fifth street.

Washington, D. C.—The Cook & District Waste Paper Company, 17 Q street, N. W., contemplates the rebuilding of the portion of its warehouse and distributing plant, destroyed by fire April 23, with loss reported at $15,000.

Middletown, Ohio—The Paul A. Sorg Paper Company will proceed with an improvement program at its local mill, including remodeling of main two-story unit and other work, reported to cost more than $75,000. A general contract recently was let to F. K. Vaughn, Lowell street, Hamilton, Ohio. Frank Smith is vice-president and general manager.

Richmond, Va.—The Richmond Corrugated Paper Company, 306 South Sixth street, and the Fibre Board Container Company, Williamsburg avenue, have arranged plans for a consolidation, to provide for considerable increase in present production facilities in the near future. The two plants will continue to operate as heretofore for the time being, and later, it is understood, will be merged. David J. Donan is president of the consolidated organization; Charles W. Throckmorton, treasurer; and Leslie T. Stansbury, secretary.

Rochester, N. Y.—The Sagamore Paper Box Corporation, care of Castle & Fitch, 910 Union Trust Building, Rochester, attorneys, recently organized under state laws, with capital of $20,000, is said to be arranging for the operation of a local plant for the manufacture of cardboard containers, egg cases and fillers, cartons, etc. The new company is headed by John F. Romig and Oswald J. Gendreau.

Kalamazoo, Mich.—The Kalamazoo Stationery Company is said to have preliminary plans under advisement for the construction of a new factory at Frank and Harrison streets, for the production of writing papers, etc. It is reported to cost about $50,000, with equipment.

Chicago, Ill.—The Chicago Coated Board Division of the Robert Gair Company, 420 East, North Water street, is arranging to ask bids early in May for the construction of its proposed new plant addition, to be equipped as a machine department. It is reported to cost close to $100,000, with machinery. Carl R. Engle is company engineer, address noted, in charge. Headquarters of the Robert Gair Company, parent organization, are at 350 Madison avenue, New York.

Dallas, Tex.—The Equality Paper Box Company, 1609 Hughes Circle, recently formed with a capital of $10,000, purposes to arrange for the early operation of a local plant, for the manufacture of paper boxes and containers. The new company is headed by C. C. Capshaw and O. B. Alexander.

Port Huron, Mich.—The Port Huron Sulphite and Paper Company, Richardson avenue, has completed plans for a new addition to its local mill, and will proceed with work at an early date. It will be one-story, estimated to cost close to $50,000, with equipment. Raseman & Freier, Murphy Building, Detroit, are architects and engineers.

Victoria, B. C.—The Victoria Paper Box Company, Wharf street, is reported to be planning the construction of a new local plant for the manufacture of paper boxes, cartons, etc., to cost in excess of $30,000, with equipment. Dick Wilson is president.

New Companies, Etc.

New York, N. Y.—The Accurate Fibre and Shipping Container Corporation has been incorporated with capital of $10,000, to manufacture paper boxes, egg cartons, etc. The incorporators are Jacob and Arthur Rudnick and Sidney Rothberg; the company is represented by George Rudnick, 259 Fifth avenue, New York.

New York, N. Y.—The Frank Schulman Corporation has been incorporated with capital of $150,000, to manufacture paper and paper products. The company is represented by M. H. Latner, 350 Fulton street, Brooklyn, N. Y.

Chicago, Ill.—The Sterilized Products Company, 1409 Dayton street, has been incorporated with nominal capital of $1,000, to manufacture and deal in paper stocks. The incorporators are Isadore H. Levin and Morris and Meyer Dry. I. B. Lipson, 77 West Washington street, Chicago, attorney, is representative.

Boston, Mass.—Plastic Products, Inc., has been incorporated with capital of $50,000 and 1,000 shares of common stock, no par value, to manufacture and deal in wallboard and kindred products. Ernest P. Gage is president; and George B. Keene, 23 Pinckney street, Boston, treasurer.

Chicago, Ill.—The Barton Paper Company, 111 West Washington street, has been incorporated with capital of $50,000, to manufacture and deal in paper and paper products. The incorporators are Samuel G., and LeRoy R. Barton and Ninian H. Welch, First National Bank Building, Chicago. The last noted is representative.

New York, N. Y.—The Celoron Company, 200 Hudson street has been incorporated with capital of $2,100,000, to manufacture and deal in paper and paper board products. Joseph A. Ranck is secretary and treasurer of the company.

TYPE "B" IRON EXTRACTOR for PAPER MAKING

It consists of special magnetic surfaces of great power over which the paper stuff is made to pass. As a result, all the iron and many other foreign substances are completely extracted. Hundreds of these devices are in use daily and no one of them has failed to give complete satisfaction. Write us for Bulletins and full details.

THE ROLAND T. OAKES CO., Holyoke, Mass.
Electrical Specialists. *Established 1885*

Paper Manufacturers

Interested in the report of the Writing Paper Association covering new packing methods of writing and fine papers

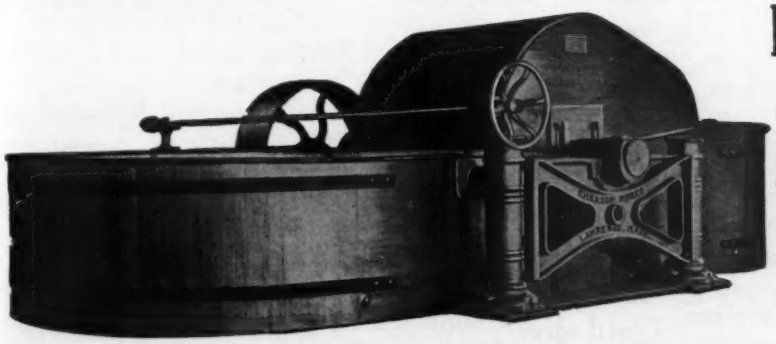
Two slotted and creased blanks, plus a Morrison 'Perfection' Wire Stitcher produce a perfect telescope container.

DETAILS GLADLY SENT UPON REQUEST

The J.L.Morrison Company, Inc.

General Offices and Factory: NIAGARA FALLS, N. Y.

Direct Sales Offices: 424 West 33rd Street New York City; 116 West Harrison Street Chicago



EMERSON MFG. CO.

LAWRENCE, MASS.

See the Second-Hand Machinery ads and note the ABSENCE of

EMERSON BEATING ENGINES

They seldom wear out and are never thrown out. PERFECT CIRCULATION. NO "PADDLING."

The "EMERSON" JORDAN

is made in several sizes, both belt and direct connected motor-drive.

WRITE FOR DETAILS

Imports of Paper and Paper Stock

NEW YORK, BOSTON, PHILADELPHIA AND OTHER PORTS

NEW YORK IMPORTS

WEEK ENDING APRIL 30, 1927

SUMMARY

Cigarette paper .....374 cs.
Wall paper .....56 bls., 19 cs.
Paper hangings .....8 bls.
Painted paper .....6 cs.
News print .....1,674 rolls
Printing paper .....218 rolls, 10 cs.
Wrapping paper .....13 bls., 37 cs.
Packing paper .....53 bls., 75 cs.
Pergamyn paper .....41 cs.
Decalcomania paper .....36 cs.
Filter paper .....41 bls., 30 cs.
Drawing paper .....13 cs.
Cover paper .....5 cs.
Trunk paper .....7 cs.
Typon paper .....2 cs.
Silk paper .....2 cs.
Writing paper .....11 cs.
Colored paper .....4 cs.
Tissue paper .....15 cs.
Baryta coated paper .....33 cs.
Straw board .....559 rolls
Miscellaneous paper.....196 rolls, 3 bls., 176 cs.

CIGARETTE PAPER

Standard Products Corp., Schodack, Havre, 80 cs.
R. J. Reynolds Tobacco Co., Schodack, Havre, 200 cs.
Standard Products Corp., Suffren, Havre, 80 cs.
Standard Products Corp., France, Havre, 14 cs.

WALL PAPER

Dyson Shipping Co., American Banker, London, 7 bls.
F. J. Emmerich, Carmania, Liverpool, 2 bls.
R. F. Downing & Co., Carmania, Liverpool, 8 bls.
W. H. S. Lloyd & Co., Samaria, Liverpool, 7 bls.
F. J. Emmerich, Cleveland, Hamburg, 24 bls.
A. C. Dodman, Jr., Inc., Majestic, Southampton, 8 bls.
Keller Dorian Paper Co., Mauretania, Southampton, 19 cs.

PAPER HANGINGS

A. C. Dodman, Jr., Inc., Baltic, Liverpool, 5 bls.
A. C. Dodman, Jr., Inc., Samaria, Liverpool, 3 bls.

PAINTED PAPER

Hensel, Bruckman & Lorbacher, Suffren, Havre, 6 cs.

NEWS PRINT

Parsons & Whittemore, Inc., Bremen, Bremen, 983 rolls.
Perkins, Goodwin & Co., Cleveland, Hamburg, 485 rolls.
F. Henjes, Jr., Cleveland, Hamburg, 62 rolls.
[illegible] Trading Co., Gustavsholm, Stockholm, 144 rolls.

PRINTING PAPER

Keuffel & Esser, Cleveland, Hamburg, 104 rolls.
International Forwarding Co., Cleveland, Hamburg, 3 cs.
W. Hartman & Co., Cleveland, Hamburg, 114 rolls.
L. de Jonge & Co., Noordam, Rotterdam, 7 cs.

WRAPPING PAPER

Birn & Wachenheim, Mercier, Antwerp, 18 cs.
Wilkinson Bros. & Co., Inc., France Maru, Hamburg, 13 bls.
C. Steiner, Cleveland, Hamburg, 19 cs.

PACKING PAPER

Old Master Paper & Pulp Corp., Cleveland, Hamburg, 45 cs.
Haule Wax Paper Manfg. Co., Cleveland, Hamburg, 30 cs.
J. P. Heffernan Paper Co., Cleveland, Hamburg, 53 bls.

PERGAMYN PAPER

F. C. Strype, Cleveland, Hamburg, 21 cs.
E. V. Hadley, Cleveland, Hamburg, 20 cs.

DECALCOMANIA PAPER

B. F. Drakenfeld & Co., Baltic, Liverpool, 24 cs. (duplex).
B. F. Drakenfeld & Co., Baltic, Liverpool, 10 cs. (simplex).
C. W. Sellers, Cleveland, Hamburg, 2 cs.

FILTER PAPER

American Express Co., La Bourdonnais, Bordeaux, 25 cs.
C. G. Euler, La Bourdonnais, Bordeaux, 10 bls.
H. Reeve Angel & Co., Inc., Majestic, Bordeaux, 31 bls., 5 cs.

DRAWING PAPER

Keuffel & Esser, Cleveland, Hamburg, 13 cs.

COVER PAPER

International Forwarding Co., Cleveland, Hamburg, 5 cs.

TRUNK PAPER

P. H. Petry & Co., Cleveland, Hamburg, 7 cs.

TYPON PAPER

Globe Shipping Co., Majestic, Southampton, 2 cs.

SILK PAPER

S. Gilbert, Noordam, Rotterdam, 2 cs.

WRITING PAPER

Selma Mercantile Corp., Mercier, Antwerp, 2 cs.
W. J. Byrnes, Schodack, Havre, 2 cs.
American Express Co., Schodack, Havre, 3 cs.
Coenca Morrison Co., France, Havre, 3 cs.
Japan Paper Co., France, Havre, 1 cs.

COLORED PAPER

Phoenix Shipping Co., Bremen, Bremen, 4 cs.

TISSUE PAPER

F. B. Vandegrift & Co., Samaria, Liverpool, 15 cs.

BARYTA COATED PAPER

Globe Shipping Co., Pres. Harding, Bremen, 33 cs.

STRAW BOARD

R. Wilson Paper Corp., Noordam, Rotterdam, 206 rolls.
Hess Bros., Noordam, Rotterdam, 216 rolls.
Wilkinson Bros. & Co., Inc., Noordam, Rotterdam, 21 rolls.
A. Vuyk, Noordam, Rotterdam, 116 rolls.

MISCELLANEOUS PAPER

Graphic Duplicator Co., France Maru, Hamburg, 3 bls.
A. S. Zabriskie, Bremen, Bremen, 88 rolls.
E. Walker, Bremen, Bremen, 45 cs.
F. J. Emmerich, France, Havre, 6 cs.
Guibout freres, France, Havre, 8 cs.
R. F. Downing & Co., France, Havre, 4 cs.
S. Gilbert, Noordam, Rotterdam, 5 cs.
P. H. Petry & Co., Noordam, Rotterdam, 15 cs.
H. Reeve Angel & Co., Inc., Hjelmaren, Helsingfors, 93 cs.
Box Board Lining Co., Hjelmaren, Helsingfors, 108 rolls.

RAGS, BAGGINGS, ETC.

E. J. Keller Co., Inc., France Maru, Hamburg, 47 bls. rags.
Castle & Overton, Inc., France Maru, Hamburg, 174 bls. bagging.
Katzenstein & Keene, Inc., Schodack, Dunkirk, 58 bls. rags.
Salomon Bros. & Co., Schodack, Dunkirk, 55 bls. rags.
Castle & Overton, Inc., Schodack, Havre, 96 bls. bagging.
Castle & Overton, Inc., Schodack, Havre, 184 bls. rags.
Bank of America, Liberty Land, Leghorn, 102 bls. rags.
Chase National Bank, Alberta, Venice, 79 bls. rags.
Brown Bros. & Co., Alberta, Venice, 44 bls. rags.
Equitable Trust Co., Archimedes, Manchester, 52 bls. rags.
R. F. Downing & Co., Archimedes, Manchester, 299 bls. rags.
American Woolstock Corp., Sangamon, Leghorn, 40 bls. rags.
V. Galaup, Sangamon, Leghorn, 18 bls. rags.
E. J. Keller Co., Inc., Sangamon, Leghorn, 47 bls. linen threads.
E. J. Keller Co., Inc., Cleveland, Hamburg, 57 bls. rags.
I. Cohen Son & Co., Cleveland, Hamburg, 101 bls. rags.
American Over Ocean Corp., Calcutta Maru, Kobe, 10 bls. rags.
National City Bank, Southern Cross, B. Aires, 49 bls. rags.
Castle & Overton, Inc., Noordam, Rotterdam, 20 bls. rags.
N. Y. Trust Co., Pres. Harding, Bremen, 60 bls. bagging.
Chase National Bank, Barbadian, London, 344 bls. rags.
Castle & Overton, Inc., Bremen, Bremen, 23 bls. rags.
E. J. Keller Co., Inc., Sinaia, Marseilles, 310 bls. bagging.

OLD ROPE

Credit Lyonnais, Liberty Land, Marseilles, 100 rolls.
Whaling Waste Products Corp., Bremen, Bremen, 16 coils.
Brown Bros. & Co., Cleveland, Hamburg, 33 coils.
Brown Bros. & Co., Noordam, Rotterdam, 53 bls.
Brown Bros. & Co., Suevier, Antwerp, 53 bls.
Brown Bros. & Co., Noordam, Rotterdam, 79 pkgs.

MANILA ROPE

Burrahel Co., Baltic, Liverpool, 8 pkgs.

ROPE

N. Y. Cordage Co., Mercier, Antwerp, 79 rolls.

CASEIN

Karolith Corp., La Bourdonnais, Bordeaux, 280 bags.
Atterbury Bros., Inc., Southern Cross, Buenos Aires, 417 bags.
Kalbfleisch Corp., Southern Cross, Buenos Aires, 1,021 bags.

WOOD PULP

E. J. Keller Co., Inc., France Maru, Hamburg, 667 bls. wood pulp, 100 tons.
J. Anderson & Co., France Maru, Hamburg, 1,600 bls. wood pulp, 320 tons.
Bulkley, Dunton & Co., Gustavsholm, ——, 4,350 bls. wood pulp.
Bulkley, Dunton & Co., Noordam, ——, 925 bls. wood pulp.
Buck, Kiaer & Co., Inc., Gustavsholm, Stockholm, 1,200 bls. sulphite.
W. von Doorn, Noordam, Rotterdam, 170 bls. wood pulp
Castle & Overton, Inc., Innoko, Rotterdam, 746 bls. wood pulp, 120 tons.
Buck, Kiaer & Co., Inc., Bergensfjord, Oslo, 1,600 bls. kraft pulp.

WOOD PULP WADDING

Birn & Wachenheim, Noordam, Rotterdam, 5 bls., 15 cs.

BOSTON IMPORTS

WEEK ENDING APRIL 30, 1927

F. S. Webster Co., Inc., Samaria, Liverpool, 6 cs. tissue paper.
G. F. Malcolm, Samaria, Liverpool, 36 cs. tissue paper.
Scandinavian Pulp Agency, Inc., Gustavsholm, Stockholm, 200 bls. wood pulp.
Buck, Kiaer & Co., Inc., Gustavsholm, Stockholm, 1,200 bls. wood pulp.
Castle & Overton, Inc., Gustavsholm, Konigsberg, 3,084 bls. wood pulp.
Bulkley, Dunton & Co., Gustavsholm, ——, 4,770 bls. wood pulp.
Brown Bros. & Co., Barbadian, London, 137 bls. waste paper.
Crocker Burbank Co., Barbadian, London, 487 bls. waste paper.
Castle & Overton, Inc., Pipestone County, Havre, 46 bls. rags.
Bulkley, Dunton & Co., Binnendyk, ——, 138 bls. wood pulp.
Bulkley, Dunton & Co., Blydendyk, ——, 54 bls. rags.

BALTIMORE IMPORTS

WEEK ENDING APRIL 30, 1927

E. J. Keller Co., Inc., France Maru, Hamburg, 1,000 bls. wood pulp, 150 tons.
Congoleum Nairn Co., Schodack, Havre, 188 bls. rags.
Congoleum Nairn Co., Schodack, Dunkirk, 127 bls. rags.
S. Shapira & Sons, Calcutta Maru, Osaka, 30 bls. rags.
Bulkley, Dunton & Co., Goettingen, ——, 1,620 bls. wood pulp.
Bulkley, Dunton & Co., Westerner, ——, 600 bls. wood pulp.

PHILADELPHIA IMPORTS

WEEK ENDING APRIL 30, 1927

Brown Bros. & Co., City of Eureka, Bari, 418 bls. rags.
Brown Bros. & Co., Liberty Land, Leghorn, 405 bls. rags.
V. Galaup, Liberty Land, Leghorn, 85 bls. rags.
J. M. Hagy Waste Works, Liberty Land, Leghorn, 28 bls. rags.

(Continued on page 80)

For reliable running and average long life

LINDSAY FOURDRINIER WIRES

are unsurpassed

We make them for the largest and fastest machines.

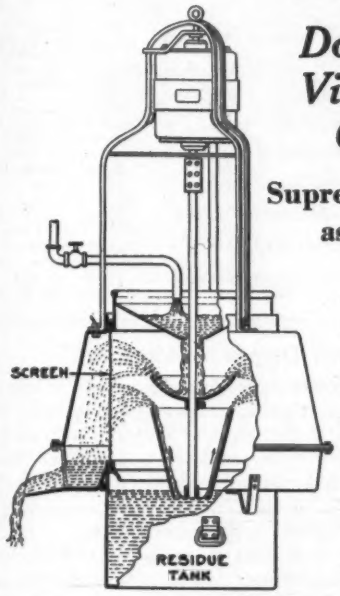
Cylinder Wires All Sizes

The Lindsay Wire Weaving Co.

Collinwood Sta. CLEVELAND, OHIO

The "ROTOSPRAY"

CLAY SIFTER



Does Not Vibrate or Gyrate

Supreme in Service as in saving

The screen lasts 4 to 5 times as long as on any other sifter. Life of machine itself almost indefinite.

Shipped on 30 days trial.

Write us to-day

THE ROTOSPRAY MFG. CO.
358 West Madison St. Chicago, Ill.

West Virginia Pulp and Paper Company

Manufacturers of
SUPERCALENDERED and MACHINE FINISHED BOOK and LITHOGRAPHIC PAPERS

Offset, Envelope, Bond, Writing, Cover and Music Paper, High Grade Coated Book, Index Bristol, Post Card, Kraft and Label Papers.

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Bleached Spruce Sulphite and Soda, Kraft Pulp

200 Fifth Avenue New York — 732 Sherman Street Chicago
503 Market St., San Francisco, Cal.
122 East 7th St., Los Angeles, Cal.
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E. J. KELLER COMPANY
INCORPORATED
200 FIFTH AVENUE
NEW YORK

FOREIGN AND DOMESTIC
PAPER MAKERS' SUPPLIES
COTTON, JUTE AND FLAX WASTES
WOOD PULP AND RAG PULP

SOLE AGENTS IN AMERICA FOR
ETTLINGEN MITSCHERLICH UNBLEACHED SULPHITE
ROSENBERGER BLEACHED SULPHITE
ZILINA BLEACHED SULPHITE
STAFFEL RAG PULP
BLEACHED AND UNBLEACHED

Imports of Paper and Paper Stock

(*Continued from page 78*)

V. Galaup, Sangamon, Leghorn, 55 bls. rags.
American Exchange Irving Trust Co., Laguna, Leghorn, 60 bls. rags.
Anglo South American Trust Co., Laguna, Naples, 286 bls. rags.
Lagerloef Trading Co., Hjelmaren, Helsingfors, 121 bls. wood pulp boards.
Lagerloef Trading Co., Hjelmaren, Hango, 279 bls. wood pulp boards.
Paper House of Penna., Hjelmaren, Hango, 21 cs. paper.
Price & Pierce, Ltd., Hjelmaren, Gothenburg, 1,560 bls. wood pulp.
Price & Pierce, Ltd., Hjelmaren, Gothenburg, 3,602 rolls wood pulp.
E. M. Sergeant & Co., Hjelmaren, Gothenburg, 254 bls. sulphite pulp.
E. M. Sergeant & Co., Hjelmaren, Gothenburg, 1,346 bls. dry soda pulp.
J. Anderson & Co., Hjelmaren, Gothenburg, 250 bls. sulphite pulp.
The Borregaard Co., Inc., Hjelmaren, Gothenburg, 250 bls. wood pulp.
Paper Manfg. Co., Hjelmaren, Gothenburg, 118 rolls paper.
The Borregaard Co., Inc., Hjelmaren, Gothenburg, 9 bls. paper.
Bulkley, Dunton & Co., Hjelmaren, ——, 185 bls. sulphate pulp.
Robert Blank, Ontario, Havre, 245 bls. rags.
E. J. Keller Co., Inc., Ontario, Havre, 50 bls. old rope.
Castle & Overton, Inc., Ivar, Denmark, 182 coils old rope.
Castle & Overton, Inc., Blydendyk, Holland, 81 bls. rags.
Castle & Overton, Inc., London Commerce, England, 201 bls. old rope.
Castle & Overton, Inc., Pipestone County, France, 149 bls. rags.
Castle & Overton, Inc., Grete, Germany, 111 bls. rags.
Castle & Overton, Inc., Innoko, Rotterdam, 720 bls. wood pulp, 116 tons.
Bulkley, Dunton & Co., Gottingen, ——, 560 bls. wood pulp.
Bulkley, Dunton & Co., France Maru, ——, 43 bls. rags.
Bulkley, Dunton & Co., Seattle Spirit, ——, 54 bls. rags.

NEW ORLEANS IMPORTS

WEEK ENDING APRIL 30, 1927

Castle & Overton, Inc., Minnesota, France, 121 bls. rags.

New Line of Dipped Welding Rod

A new line of high grade "dipped" welding rods is now obtainable from the Lincoln Electric Company of Cleveland, Ohio. This "dipped" steel rod is the result of several years' study in the company's research laboratories and will be known as "Stable-Arc" Welding Rod and is a companion to the "Kathode" Welding Rod which has been sold by the same company for many years and is now universally known to the welding trade.

With this new rod it is possible to go to considerably larger diameters than has been customary in welding rods for metal electrode welding and is being carried in all sizes up to ½ inch.

It is claimed that this rod permits of much higher currents than has been used heretofore with the resulting greater speed. As labor is by far the greatest factor in welding costs, increased speed means a substantial decrease in welding cost. Not only does the greater heat give greater speed and less cost but also better penetration and a much smoother finished bead. In addition the greater heat obtained by the higher currents results in an annealing action which increases the ductility of the weld and gives a greater elongation. Current densities of 15,000 amperes and more per square inch can be used.

The claimed decrease in the "splutter" of the arc gives less spattered metal and therefore more actual metal is deposited per pound of rod. The higher currents, it is claimed, give a remarkably clean finished weld and on heavy welds of more than one layer very little crushing or cleaning is necessary between beads.

"Stable-Arc" welding rod is obtainable in standard 50 lb. bundles wrapped in burlap and in lengths of 14 inches. It can also be secured in longer lengths if desired.

Braithwaite Paper Mills Saved From Floods

NEW ORLEANS, La., May 2, 1927.—The pulp and paper plant of the E.Z. Opener Bag Company, at Braithwaite, La., appears to be the only paper mill seriously affected so far by the Mississippi floods. This paper mill is situated directly in the area inundated by order of the state authorities of Louisiana, to save the city of New Orleans from destruction.

The mill, however, is surrounded by a protection levee, raised and strengthened by a force of 200 men from the New Orleans Levee Board, which is expected to keep the water out. It is confidently anticipated that the plant will only suffer a temporary shut down.

Consolidate Philadelphia Offices

PHILADELPHIA, Pa., May 2, 1927.—The Philadelphia district offices of Combustion Engineering Corporation, Heine Boiler Company, and Ladd Water Tube Boiler Company, have been consolidated at 807 Bankers Trust Building, Philadelphia, Pa.

Elam Paper Co. to Move to Vicksburg

[FROM OUR REGULAR CORRESPONDENT]

KALAMAZOO, Mich., May 2, 1927.—The Elam Paper Company of Philadelphia will move its plant to Vicksburg, Mich., in the immediate future. The buildings formerly occupied by the Peck Iron and Steel Company have been purchased and the work of remodelling is in progress.

S. L. Elam, president of the company, was formerly interested in the Lee Paper Company and is well known to the industry throughout the Kalamazoo valley. He will specialize in boxed stationery and tablets, converting manufactured stock. He will give employment to a considerable force.

Postpone Opening of Tongass Bids

WASHINGTON, D. C., April 25, 1927.—Bids were to have been opened today by the Forest Service for 835,000,000 cubic feet of spruce and other pulpwood on the Tongass National Forest.

The bid opening, however, was at least temporarily postponed owing to an eleventh hour telegram from a party requesting more time to make a field survey, as provided for in the advertisement of the Forest Service. Officials of the Service refused to say whom the telegram was from and they are now having the party checked up to see how responsible they are. It is possible that the bids may be opened at once. While the officials do not deny that bids were received, it is understood that some are on hand.

St. Helens Paper Co. Adds Machinery

PORTLAND, Ore., April 28, 1927.—Two new beaters and one Jordan machine arrived at the plant of the St. Helens Pulp and Paper Company, St. Helens, Ore., late in April. When present improvements are completed there will be possible an increase of 20 per cent production.

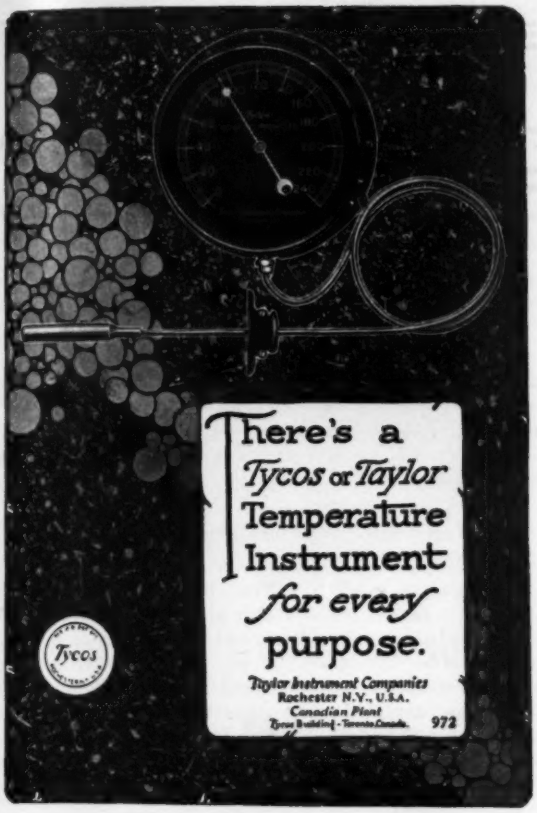
When all the late additions of equipment are placed the plant will manufacture sixty tons of kraft paper each day. Several new operatives have been placed in the finishing room, according to Max Oberdorfer, manager.

Paper Men at Chamber of Commerce Meeting

WASHINGTON, D. C., May 2, 1927.—D. C. Everest, of the Marathon Paper Mills Company, and president of the American Paper and Pulp Association, and Hugh P. Baker, secretary of the asso-

spruce and other pulpwood on the Tongass National Forest.

Others attending the convention include Milton E. Marcuse, of the Bedford Pulp and Paper Company, one of the directors of the National Chamber; J. P. Hummel, of the Hummel and Ross Fibre Company, Hopewell, Va., L. M. Alexander of the Nekoosa-Edwards Company, and others.



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New York Market Review

Office of THE PAPER TRADE JOURNAL,
Wednesday, May 4, 1927.

Trading in the local paper market during the past week was mostly along routine lines. The prevailing demand for the various grades of paper is generally considered satisfactory for the season of the year and prices are mostly holding up to schedule. Encouraging reports are being received from the sales forces of the leading paper houses and active conditions are looked for until the midsummer holidays, at least.

No further developments have been recorded in the news print market. Production is being maintained in heavy volume at both the United States and Canadian news print mills. Consumption is proceeding at an excellent pace, taking everything into consideration. Spot offerings are ample for current needs and prices are fairly steady.

Due to improved demand, there has been a marked gain in paper board production. Shipments from the mills have been heavy and the market is in a stronger position than for some time. The fine paper division is exhibiting a firm undertone and prices are holding up very well. The coarse paper market is also showing signs of activity and kraft wrapping paper is in particularly good request.

Mechanical Pulp

Most of the demand for imported and domestic ground wood during the past week was for immediate needs. Shipments on contract, however, continue to move in a satisfactory manner. The spot market is rather quiet at present, but although offerings are more plentiful, prices are being maintained, in most instances, and shading is infrequent.

Chemical Pulp

Conditions in the chemical pulp market have not changed radically. Some good sized orders are reported to have been booked at the easier prices which have been quoted recently. The only change recorded in the quotations since the preceding week was on No. 1 strong unbleached sulphite (imported), which is now offered at from 2.60 to 2.85, ex dock, Atlantic ports.

Old Rope and Bagging

Demand for both imported and domestic old rope was mostly along routine lines during the past week. Prices remain unaltered. The bagging market is slightly easier. Foreign gunny No. 1 has declined to from 1.80 to 1.90, and domestic to from 1.90 to 2.00. Heavy wool tares are also weaker, and are now quoted at from 1.65 to 1.75.

Rags

Some improvement has been noticed in the demand for imported and domestic rags. No. 1 new white shirt cuttings have been in particularly good request and are now selling at from 11.75 to 12.25. Imported rags are also arousing more interest, especially lindsay garments, which are now quoted at from 1.75 to 1.85.

Waste Paper

The bright particular feature of the paper stock market is the continued demand for old kraft machine compressed bales. Book stock is also reported to be in better request than for some time. The consumption of waste paper in the board mills has advanced in a marked degree, according to recent official reports, while mill stocks have declined, which is an augury of a speedy improvement in the paper stock industry.

Twine

Steady conditions prevail in the twine market. With the consumption of wrapping paper showing no signs of falling off at present, the immediate future of the twine industry is full of promise. Prices of the various grades are holding up to schedule and there is little talk of concessions for the present.

Waste Paper Dealers Form Association

At a meeting of waste paper packers and dealers, held at the Broadway Central Hotel, New York, last Thursday, a new association was organized, to be known as the Waste Material Merchants Association of New York, and the purposes of the organization are to be, first of all, to foster and provide an instrument for general co-operation among waste paper interests in this city, and to devise ways and means of bettering trade and marketing conditions in waste paper, of improving the quality of the waste paper packed in this center, and of creating a more cordial spirit in transactions between waste paper dealers and the mills consuming this commodity.

Following the decision to organize, Morris Kay, of the Sterling Mill Supply Company, was elected permanent chairman, and Joseph Carrano, of James Carrano & Sons, was elected secretary and treasurer. A committee, consisting of Sol Ash, chairman; Michael Stramiello, Charles Cantasano, Charles Moranna and Dominick Tocci, was appointed to draw up a set of by-laws to govern the association.

May Acquire Lincoln Paper Mills

[FROM OUR REGULAR CORRESPONDENT]

KALAMAZOO, Mich., May 2, 1927.—George O. Comfort, representing certain financial interests, is in Elkhart, Ind., where it is understood he is negotiating for the purchase of the Lincoln Paper Mills. Inventory of the plant was taken the past week. Mr. Comfort was at one time president of the Monarch Paper Company, of Kalamazoo, previous to the absorption of that concern in the Allied Paper Mills. He then went to Camden, East, Canada, and suffered reverses in business. Later he returned to Kalamazoo and tried without success to organize the Valley Paper Company. Of late he has been manager of the Peshtigo Paper Company, working under direction of the receivership.

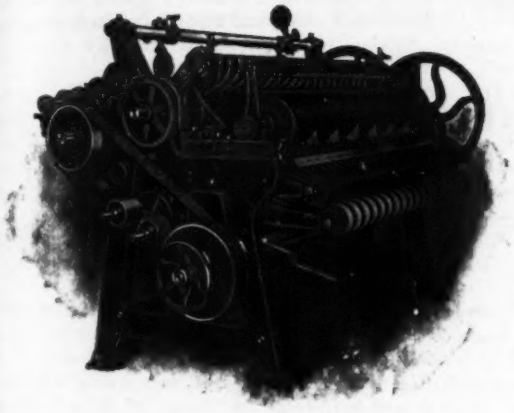
Kalamazoo capital was formerly heavily interested in the Lincoln mills, holding control. They were associated with the late A. A. Wheat. Most of the local holdings have in the past two or three years been acquired by Elkhart capitalists.

Shaw Heads Pulp Company

ABERDEEN, Wash., April 28, 1927.—J. C. Shaw, Grays Harbor lumberman, has been elected president of the Grays Harbor Pulp and Paper Company, which will erect a large pulp plant at Hoquiam on the old National mill site. Mr. Shaw is manager of the Eureka Lumber Company, which cuts hemlock exclusively, and has arranged to supply the plant with waste material.

Paper Cutters

Single, Duplex and Diagonal



CUTTER KNIVES PATENT TOP SLITTER

HAMBLET MACHINE CO.

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FOREIGN PAPER MILLS, INC.

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The Use of

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protects your rolls and insures their delivery to your customer in perfect condition. They eliminate claims for damages.

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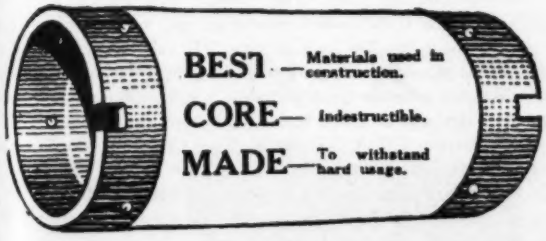

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HAMILTON, ONTARIO

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Belt Fasteners
Every year sees a large increase in the number of users of FLEXCO H. D. Belt Fasteners. Their compression grip has worked out most satisfactorily from the practical standpoint. Note the tight butt joint. Made in five sizes for all conveyors from ¼ inch up to the largest.
FLEXCO CLIP
MADE IN U.S.A.
Write us for full description and nearest jobber. Consultation invited.
The new FLEXCO Clips speed up application. They hold belt heads rigidly in position in plate while nails are tightened. Now included in every box without added cost.
Flexible Steel Lacing Company
4689 Lexington Street Chicago, Illinois
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Conveyor Belts

708-HD

Miscellaneous Markets

Office of THE PAPER TRADE JOURNAL,
Wednesday, May 4, 1927.

While trading in the local chemical market has quietened down somewhat, the position of the industry is sound, and prices are holding up very well. Contract shipments are proceeding at a fairly satisfactory pace, and the movement experienced recently has not diminished to any great extent. The volume of inquiries being received for future business is reported to be encouraging, and the future outlook is promising, on the whole.

BLANC FIXE.—No changes were reported in the blanc fixe market, and both the pulp and the powder continue to be in good demand. Shipments against contract are moving in a normal manner. The pulp is still quoted at $60 a ton, in bulk, while the powder is selling at from 4 cents to 4¼ cents per pound, in barrels, at works.

BLEACHING POWDER.—Steadiness continues to prevail in the bleaching powder market. Stocks are reported to be rather limited and few factories have much surplus accumulations on hand. Prices remain unchanged. Quotations on bleaching powder range from $2 to $2.40 per 100 pounds, in large drums, at works, according to quantity.

CAUSTIC SODA.—Demand for caustic soda during the past week was mostly along routine lines. Production continues to be maintained at a high rate. Contract shipments are still going forward in heavy volume. Caustic soda is quoted at from $3 to $3.10 per 100 pounds, in large drums, at works. Spot car lots are offered at $3.20 per 100 pounds.

CASEIN.—The position of the domestic casein market is unchanged, but the price of imported casein has declined slightly, due to the receipt of heavier imports from Argentina. Imported casein is now quoted at from 18½ cents to 19½ cents a pound. Domestic casein is still selling at from 18½ cents to 19¼ cents a pound, all in bags, car lot quantities.

CHINA CLAY.—Both imported and domestic paper makers' clay is in good demand. Supplies in hand are said to be quite sufficient to take care of the prevailing demand. Prices are steady to firm. Domestic washed clay is still selling at from $8 to $9 a ton, at mine, and pulverized at $10 per ton. Imported china clay is quoted at from $15 to $25 a ton, in bulk, ship side.

CHLORINE.—Consumption of chlorine is being maintained along steady lines, and production is being keyed to keep a little ahead of requirements. Prices remain unaltered. The quotation on chlorine is still 4 cents a pound, in tanks, or multi-unit cars, at works, on contract orders. The spot quotation is from 4¼ cents to 4½ cents a pound.

ROSIN.—Only a moderate volume of business was transacted in the rosin market during the past week, and prices were somewhat easier. At the naval stores, the grades of gum rosin used in the paper mills are now offered at from $10.35 to $10.80 per 280 pounds, ex dock, in barrels. Wood rosin remains unchanged at $9.50 per 280 pounds, at southern shipping points.

SALT CAKE.—Steady consumption of salt cake is reported by the handlers of this product. Producers are reported to be well sold ahead on contract, and offerings are decidedly limited. Salt cake is still quoted at from $18 to $20 a ton, in bulk, at works. Chrome salt cake is selling at from $14 to $15 a ton, in bulk, at works.

SODA ASH.—Contract withdrawals of soda ash are being maintained in a satisfactory manner. The tone of the market is sound and the demand for this product is excellent for the time of the year. Prices remain unaltered. Contract quotations of soda ash, in car lots, at works are as follows: in bulk, $1.32½, and in barrels, $1.57½.

STARCH.—No changes were recorded in the starch market during the past week. Shipments of this product continue to go forward at an excellent pace and consumption is keeping well up to average. Special paper makers' starch is at present quoted at $3.07 per 100 pounds, in bags, and at $3.24 per 100 pounds, in barrels.

SULPHATE OF ALUMINA.—The sulphate of alumina market was fairly lively during the past week. Accumulations of this product are said to be not excessive, and prices are steady to firm. Commercial grades of sulphate of alumina are still offered at from $1.40 to $1.50 per 100 pounds, in bags, at works, in car lots. The iron free is offered at from $2 to $2.05 per 100 pounds, at works.

SULPHUR.—Demand for sulphur from the paper mills is persistent, and a fair movement of shipments against contract is proceeding. Prices remain steady and there is little talk around about concessions. Sulphur is still selling at from $18 to $19 a ton, in bulk, at mine.

TALC.—Trading in the talc market was mostly along routine lines during the past week. However, the market is in an excellent position and supplies are moving into consumption at a normal pace. Prices are holding up to former levels, in most instances. Domestic talc is quoted at from $16 to $18 a ton, at eastern mines. French talc is selling at from $18 to $22 a ton, ship side.

News Demand Falls Behind Capacity

[FROM OUR REGULAR CORRESPONDENT]

MONTREAL, Que., May 3, 1927.—That the news print market is no longer keeping pace with the enlarging capacity of the paper mills is made strikingly evident in the annual report of Price Brothers & Co., Limited, for the fiscal year ending February 28. This report reveals net profits for the period to be $4,063,211, a decline of $200,000 as compared with the earnings in the preceding year. John H. Price, the president, in his remarks to shareholders, states that in the last two months of the fiscal year the earnings from the paper mills fell short of previous months, on account of the necessity of curtailment in output, and he adds that it would appear that this condition of the market is likely to remain at least during the current year.

During the year the returns from the lumber branch of the business again showed satisfactory profits with practically no stock on hand.

Mr. Price further states that the construction work in connection with doubling the capacity of the company's news print mill at Riverbend is progressing satisfactorily. The profits for the year were equal to 2.7 per cent on the common stock, as compared with 3.1 per cent in the preceding year.

As showing the rapid growth of news print capacity in Canada, it may be stated that it was only in 1922 that news print production in this country first reached 1,000,000 tons per annum, while it is expected that due to new construction now proceeding the capacity will exceed 2,000,000 this year.

Paper Associations Meet at Kalamazoo

KALAMAZOO, Mich., May 2, 1927.—"The Manufacture and Production of Casein" was the subject of an address delivered at the Wednesday evening meeting of the Cost and Technical Association of the Paper Industry, Kalamazoo valley division, held at the Kalamazoo Country Club. The speaker was Harry L. Dergy, president of the Kalbfleisch Corporation, and a man with 30 years of experience in his line back of him. He told particularly of the methods employed in Argentine in the manufacture of casein, declaring that a better quality can be produced there than in the United States and at much less cost, due to cheap labor.

J. H. Barrett, C.P.A., of the Kellogg Company, Battle Creek, took for his subject "Passing of the Rule of the Thumb." He said that every manufacturer, jobber and retailer should have a budget and that it should be closely tied up with the system of standard costs. He also explained how to build a workable budget.

Dinner was served at 6:30. There were 58 in attendance.

Carl Schneider, chemist for the Hawthorne Paper Company, was the speaker at the Thursday evening dinner session of the Michigan Division of the American Pulp and Paper Mill Superintendents Association. His topic was based on certain phases of the use of rosin sizing. The meeting was at the Park-American.

Cotton and Paper Rolls
Super Calenders
Friction Calenders
Embossing Calenders
Hydraulic Presses and Pumps

Successors to the Granger Foundry & Machine Co.

The Textile-Finishing Machinery Company
PROVIDENCE, R. I.

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HIGHEST QUALITY
SPECIALLY MADE FOR THE PAPER TRADE
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BEMIS ASSOCIATES INC.
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Clay
300 tons daily
AMERICAN MADE FOR AMERICAN TRADE

Some portion of our clay production is *pulverized*. That part of it which is *pulverized* is, as far as we know, the only *pulverized clay* which is washed and refined before being pulverized. This insures greater freedom from impurities and an exceedingly uniform product.

Prices of M-E pulverized clay may surprise you even considering this additional treatment.

Let us submit sample and quote you.

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MINER-EDGAR CO.
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NEW YORK

TANKS

Blow Pits
Acid Storage
Tanks, Vats,
Etc.

Send us your specifications for prompt shipment.

Kalamazoo Tank & Silo Co.
Kalamazoo, Michigan

"Ask Your Neighbor What He Thinks of Them"

100 JENSSEN

Two-Tower Acid Systems now in operation or building.

Jenssen Spray Type Cooler
Bullard Gas Washer
Decker Cooking Process
Kamyr Feltless Machines
Kamyr Pulp Presses
Strindlund Relief Cooler

G. D. Jenssen Company
200 5th Ave. New York, N. Y.

Market Quotations

Quoted by Hepburn & Co., 74 Broadway, N. Y. City, to whom all inquiry for quotations on these or any other Securities is referred.

BONDS	BID	OFFERED
Advance Bag & Paper, 7s 1943	101	103*
A. P. W Pulp & Power, 7s 1945	100	102
American Writing Paper, 6s 1947	79	82
Bastrap Pulp & Paper, 6½s 1940	100	103
British Columbia Pulp & Paper, 6s 1950	80	90*
Beaver Products Corp., 7½s 1942	106	109
Berkshire Hills Paper, 8s 1941	60	80
Brown Paper Co., 1st 5½s 1946	94	98
Bryant Paper Co., 6s 1942	98	102
Cape Breton Pulp & Paper, 6s 1932	101	103
Central Paper Serial 6, 6½s 1942	89	...
Champion Coated Paper, 6s 1926 to 1932	98	...
Champion Fibre, 8s 1930	100	...
Champion Paper Corp'n, 1st 6s 1945	94	97
Continental Paper Products, 6½s 1943	88	91½
Cornell Wood Prod., 7½s 1937	100	104*
Crown Willamette Paper, 6s 1951	97	101
Donnaconna Paper, 6s 1940	98	102
Dells Paper & Pulp Serial, 6s 1926-38	*95	...
Eastern Mfg. Co., 7s 1938	90	93
Eddy Paper, 7½s 1931	99	102
Escanaba Paper Serial, 6s 1926-39	90	95
Filer Fibre Serial, 7s 1926-39	90	95
Fort Orange Paper, 7s 1942	95	100*
Fox River Paper, 7s 1931	99	...
Gair Co. (The Robt.), 7s 1937	104	106
Gilbert Paper Co., 6½s 1926-29	89	...
Hammermill Paper, 6s 1939	100	103*
Itaska Paper & Prairie River Power, J+5½s 1926-38	94	96*
Itaska Paper 1st, 6s 1933-38	96	98*
Kalamazoo Veg. Parchment, 6s 1938	98	...
Marinette & Menominee, 7½s 1936	101	...
Mead Pulp & Paper, 5% Notes, 1927-37	90	95
Menasha Printing & Carton, 6½s 1939	99½	...
Mengel Company, 7s 1926 to 1934	100*	102
Monroe Paper Products, 7½s 1932	96	...
Munising Paper, 6s 1927-36	96	100
Nekoosa Edwards, 1st Ref. 6s 1928 to 1942	96	99*
Orono Pulp & Paper, 6s 1943	98	...
Orono Pulp & Paper, 5s 1941	94	...
Oswego Falls Corp., 6s 1941	98	100*
Oxford Paper, 6s 1947	100	...
Paepcke Paper Mills, 7s 1930	99	None
Parsons Pulp & Lumber, 7s 1928	97	...
Parker Young Co., 6½s 1944	95	99
Paterson Parchment Paper, 6s 1938	100½	102
Penobscot Chemical Fibre, 6s 1942	98	...
Poland Paper, 7s 1930	98	...
Port Alfred Pulp, 6½s 1943	*96	...
Queens City Paper, 7s 1932	95	100*
Richardson Co., 6s 1938	100	...
Spanish River Pulp & Paper, 8s 1941	106	110
Stevens & Thompson Paper, 6s 1942	91	94
St. Anne Paper, 6½s 1946	95½	98*
St. Croix Paper, 5s 1926-37	95	98*
St. Regis Paper Serial, 6½s 1926-35	98½	...
Tait Paper & Color Industries, 6s 1934	85	93
Taggart Bros. Co., 6s 1944	94	97
Ticonderoga Pulp & Paper, 5s 1930	95	98
Ticonderoga Pulp & Paper, 6s 1940	98½	100*
Warren (The S. D.) Company, 6s 1945	98	101
Wotab Paper, 6½s 1943	102	...
Westfield River Paper, 7s 1926-43	Wanted	...
Whitaker Paper, 7s 1942	103	106
Witmer-Parsons Pulp & Lbr. (Units)	63	70

STOCKS	BID	ASKED
Advance Bag & Paper, 8% Pfd.	97	100*
Am. Tissue Mills, 7% Pfd.	95	100
British Columbia P. & P., Pfd.	65	70
Brompton Pulp & Paper, 8% Pfd.	93	98*
Brown Corpn., 7% Pfd.	97	100*
Champion Fibre, 7% Pfd.	99	103*
Diem & Wing, 7% Cum. Pfd.	87	...
Donnaconna Paper, Com.	58	...
Donnaconna Paper, Pfd.	95	100
Eastern Mfg. Co., 1st Pfd.	34	37
Great Northern Paper (new)	60	70
Hammermill Paper, 7% Pfd.	105	110
Hinde & Dauch, Com.	135	...
Hinde & Dauch, Pfd.	100	...
Holyoke Card & Paper	150	None
Marathon Paper Mills, Com.	125	...
Midwest Box Co., Pfd. 8%	80	85
Midwest Box Co., Pfd. 6%	55	65
Louis De Jonge Co., 7% Pfd.	93	96
Oxford Papers, Com.	102	...
Oxford Paper Co., Pfd.	100	105
Penobscot Chemical Fibre, Com.	65	75*
Richardson Co., 7% Pfd.	104	...
Rubberoid Company	73	77
Seaman Container, Class B (par $1)	1	None Off.
Seaman Paper Co.	Wanted	None Off.
St. Croix Paper	150	170
St. Regis Paper Co., 7% Cum. Pfd.	97	100
Westfield River Paper Co., 1st Pfd.	Wanted	None Off.
West Virginia Pulp and Paper, Com.	58	63
West Virginia Pulp and Paper, Pfd.	97	102
Whittaker Paper, 7% Cum. Pfd.	97	103

* Nominal.

Paper

(F. o. b. Mill)

Ledgers	11.00	@38.00
Bonds	9.00	@45.00
Writings—		
Extra Superfine	14.00	@32.00
Superfine	14.00	@32.00
Tub sized	10.00	@15.00
Engine Sized	8.00	@11.00
News—		
Rolls, contract	3.25	@ —
Rolls, transient	3.25	@ 3.50
Sheets	3.65	@ 3.85
Side Runs	3.00	@ 3.75
Book, Cased—		
S. & S. C.	6.50	@ 8.00
M. F.	6.25	@ 7.75
Coated and Enamel	8.00	@15.00
Lithograph	8.00	@15.00
Tissues—Per Ream—		
White No. 1	.80	@ 1.00
Anti-Tarnish	1.10	@ 1.90
Colored	1.00	@ 2.00
White No. 2	.75	@ .85
Kraft	.90	@ 1.00
Manila	.75	@ .85
Kraft—		
No. 1 Domestic	6.25	@ 6.50
No. 2 Domestic	5.25	@ 5.50
Southern	4.75	@ 5.25
Imported	6.50	@ 7.00
Manila—		
No. 1 Jute	9.00	@ 9.25
No. 2 Jute	7.75	@ 8.50
No. 1 Wood	4.75	@ 5.25
No. 2 Wood	4.00	@ 4.50
Butchers	3.75	@ 4.25
Fibre Papers—		
No. 1 Fibre	5.00	@ 5.50
No. 2 Fibre	4.75	@ 5.25
Common Bogus	2.75	@ 3.00
Screenings	3.00	@ 3.25
Card Middles	4.00	@ 5.00
Boards—per ton—		
News	42.50	@45.00
Straw	57.50	@60.00
Chip	40.00	@42.50
Binders' Boards	65.00	@70.00
Sgl. Mla. Ll. Chip.	52.50	@55.00
Wood Pulp	67.50	@72.50
Container	60.00	@65.00
Glassine—		
Bleached, basis 25 lbs.	13.00	@16.00
Bleached, basis 20 lbs.	15.00	@16.00

Mechanical Pulp

(Ex-Dock)

No. 1 Imported—		
Moist	32.00	@34.00
Dry	34.00	@36.00
(F. o. b. Mill)		
No. 1 Domestic	27.00	@30.00
Screenings	15.00	@20.00

Chemical Pulp

(Ex-Dock, Atlantic Ports)

Sulphite (Imported)—		
bleached	2.60	@ 2.85
Easy Bleaching	3.05	@ 3.25
No. 1 strong unbleached	2.60	@ 2.85
Mitscherlich unbleached	2.75	@ 3.40
No. 2 strong unbleached	2.60	@ 2.80
No. 1 Kraft	2.70	@ 2.90
Sulphate—		
Bleached	3.75	@ 4.00
(F. o. b. Pulp Mill)		
Sulphite (Domestic)—		
Bleached	3.40	@ 4.75
Easy Bleaching Sulphite	3.00	@ 3.25
News Sulphite	2.65	@ 2.85
Mitscherlich	3.25	@ 3.75
Kraft (Domestic)	2.70	@ 3.40
Soda Bleached	3.75	@ 4.00
Sulphate Screenings—		
Coarse	.75	@ .85
Refined	1.50	@ 1.85

Domestic Rags

New Rags

Prices to Mill f. o. b. N. Y.

Shirt Cuttings—		
New White, No. 1	11.75	@12.25
New White, No. 2	8.00	@ 8.50
Silesias No. 1	7.25	@ 7.75
New Unbleached	10.75	@11.25
Washables	4.25	@ 4.75
Fancy	5.50	@ 6.00
Blue Overall	7.25	@ 7.75
New Blue Prints	5.25	@ 5.50
New Soft Blacks	5.25	@ 5.75
Mixed Khaki Cuttings	4.50	@ 5.25
Pink Corset Cuttings	9.50	@10.00
O. D. Khaki Cuttings	5.25	@ 5.75
Men's Corduroy	3.75	@ 4.25
New Mixed Blacks	3.50	@ 3.75

Old Rags

White, No. 1—		
Repacked	5.75	@ 6.50
Miscellaneous	4.75	@ 5.25
White, No. 2—		
Repacked	3.25	@ 3.75
Miscellaneous	2.75	@ 3.00
St. Soiled, White	2.50	@ 2.75
Thirds and Blues—		
Repacked	2.25	@ 2.50
Miscellaneous	1.75	@ 2.00
Black Stockings	3.25	@ 3.75
Roofing Rags—		
Cloth Strippings	1.65	@ 1.75
No. 1	1.65	@ 1.75
No. 2	1.35	@ 1.45
No. 3	1.25	@ 1.35
No. 4	1.25	@ 1.35
No. 5A	.95	@ 1.05

Foreign Rags

New Light Silesias	7.00	@ 7.50
Light Flannelettes	7.75	@ 8.50
Unbleached Cottons	10.00	@11.00
New White Cuttings	10.50	@11.50
New Light Oxfords	7.00	@ 7.50
New Light Prints	5.50	@ 6.50
New Mixed Cuttings	3.00	@ 3.50
New Dark Cuttings	2.75	@ 3.25
No. 1 White Linens	7.00	@ 7.75
No. 2 White Linens	5.25	@ 6.00
No. 3 White Linens	4.00	@ 4.50
No. 4 White Linens	3.00	@ 3.50
Old Extra Light Prints	2.75	@ 3.25
Ord. Light Prints	2.25	@ 2.50
Med Light Prints	1.85	@ 2.10
Dutch Blue Cottons	2.25	@ 2.50
German Blue Linens	2.50	@ 2.75
German Blue Cottons	2.00	@ 2.25
Checks and Blues	1.75	@ 2.00
Lindsay Garments	1.75	@ 1.85
Dark Cottons	1.60	@ 1.65
Shoppery	1.50	@ 1.60
French Blues	2.25	@ 2.50

Old Rope and Bagging

Prices to Mill f. o. b. N. Y.

Gunny No. 1—		
Foreign	1.80	@ 1.90
Domestic	1.90	@ 2.00
Wool Tares, light	1.60	@ 1.70
Wool Tares, heavy	1.65	@ 1.75
Bright Bagging	1.60	@ 1.70
Small Mixed Rope	1.50	@ 1.65
Manila Rope—		
Foreign	3.75	@ 4.00
New Burlap Cut	3.00	@ 3.25
Hessian Jute Threads—		
Foreign	3.50	@ 4.00
Domestic	3.25	@ 3.50

Old Waste Papers

(F. o. b. New York)

Shavings—		
Hard, White, No. 1	3.40	@ 3.60
Hard, White, No. 2	3.00	@ 3.15
Soft, White, No. 1	2.80	@ 3.00
Flat Stock—		
Stitchless	1.25	@ 1.35
Overissue Mag.	1.25	@ 1.35
Solid Flat Book	1.15	@ 1.25
Crumpled No. 1	.80	@ .90
Solid Book Ledger	1.90	@ 2.10
Ledger Stock	1.40	@ 1.50
New B. B. Chips	.45	@ .55
Manilas—		
New Env. Cut	2.40	@ 2.60
New Cuttings	1.60	@ 1.85
Extra No. 1 old	1.25	@ 1.35
Print	.65	@ .75
Container Board	.50	@ .55
Bogus Wrapper	.70	@ .80
Old Kraft Machine Compressed bales	2.00	@ 2.10
News—		
No. 1 White News	1.50	@ 1.60
Strictly Overissue	.65	@ .75
Strictly Folded	.47½	@ .52½
No. 1 Mixed Paper	.37½	@ .42
Common Paper	.25	@ .30

HG&CO

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Twines

F. o. b. Mill

Cotton—			
No. 1	.26	@	.27
No. 2	.24	@	.25
No. 3	.22	@	.23
B. C., 18 basis	.36	@	.38
A. B. Italian, 18 basis	.46	@	.51
Finished Jute—			
Dark 18 basis	.24	@	.25
Light 18 basis	.27	@	.28
Jute Wrapping, 3-6 Ply—			
No. 1	.21	@	.23
No. 2	.20	@	.22
Tube Rope—			
4-ply and larger	.18	@	.19
Fine Tube Yarn—			
5-ply and larger	.23	@	.27
4-ply	.24	@	.28
3-ply	.26	@	.30
Unfinished India—			
Basis	.16	@	.17
Paper Makers Twine			
Balls	.13	@	.15
Box Twine, 2-3 ply	.17	@	.19
Jute Rope	.21	@	.23
Ameri. Hemp, 6	.29	@	.31
Sisal Hay Rope—			
No. 1 Basis	.18	@	.20
No. 2 Basis	.16	@	.18
Sisal Lath Yarn—			
No. 1	.16	@	.18
No. 2	.14	@	.16
Manila Rope	.24	@	.26

CHICAGO

All Rag Bond	.35	@	.41
No. 1 Rag Bond	.25	@	.35
No. 2 Rag Bond	.14	@	.25
Water Marked Sulphite Bond	.09	@	.12
Sulphite Bond	.06¾	@	.11
Superfine writing	.18	@	.24
No. 1 fine writing	.14	@	.18
No. 2 fine writing	.12	@	.14
No. 3 fine writing	.08½	@	.12
No. 1 M. F. Book	.06½	@	.07¼
No. 2 M. F. Book	.05¼	@	.06¾
No. 1 S.&S.C. Book	.06¾	@	.07¾
No. 2 S.&S.C. Book	.05¾	@	.06½
Coated Book	.07½	@	.12
Coated Label	.07½	@	.10
News—Roll, mill	.03½	@	.04¼
News—Sheets, mill	.03¾	@	.04¾
No. 1 Manila	.04½	@	.05¾
No. 1 Fibre	.04¾	@	.05¼
No. 2 Manila	.04¼	@	.04¾
Butcher's Manila	.04	@	.04½
No. 1 Kraft	.05¾	@	.06¼
Southern Kraft	.04½	@	.05
No. 2 Kraft	.05	@	.05¼
Wood Tag Boards	.04¼	@	.06¼
Sulphite Screenings	.03	@	.03¼
Manila Tissue—			
24x36 Sheet	.07	@	.07¾
White Tissue—			
20x30 sheet	.07¼	@	.07½
Boards, per ton—			
(Delivered Central Territory—			
Plain Chip	45.00	@	47.50
Solid News	47.50	@	—
Manila Line Chip	55.00	@	57.50
Container Lined—			
(Delivered Central Territory)—			
85 Test	65.00	@	70.00
100 Test	70.00	@	75.00

Old Papers

F. o. b. Chicago

Shavings—			
No. 1 Hard White	3.60	@	3.70
White Env. Cuttings	3.60	@	3.70
No. 1 Soft Shavings	2.90	@	3.00
No. 1 Mixed	1.35	@	1.45
No. 2 Mixed	1.05	@	1.10
Ledger & Writings	1.45	@	1.60
Solid Books	1.20	@	1.30
Blanks	1.65	@	1.75
Krafts	1.80	@	1.90
New Kraft Cuts	2.25	@	2.35
Manila Envelope Cuttings	2.00	@	2.10
Ex. No. 1 Manila	1.55	@	1.65
Print Manila	.80	@	.90
Folded News (oversisue)	.65	@	.75
Old Newspapers—			
No. 1	.60	@	.65
No. 2	.55	@	.60
Mixed Papers—			
No. 1	.60	@	.65
Roofing Stocks—			
F. o. b. Chicago, net cash			
No. 1	30.00	@	—
No. 2	28.00	@	—

BOSTON

Paper

F. o. b. Mill

Ledgers—			
Sulphite	.07½	@	.15
Rag content	.15	@	.30
All rag	.38	@	.52½
Bonds—			
Sulphite	06½	@	.11½
Rag content	.15	@	.30
All rag	.36½	@	.65
Writings	.07	@	.20
Superfines	.11	@	.31
News	.03½	@	.04
Book, Super	.06	@	.09
Book, M. F.	.05¾	@	.08½
Book, Coated	.08½	@	.20
Coated Litho	.09	@	.12
Label	09½	@	.15
Jute Manila No. 1	.11	@	.13
Manila, Sul. No. 1	.04¾	@	.06½
Manila, Sul. No. 2	.03¾	@	.04½
No. 1 Kraft	.05¾	@	.06½
No. 2 Kraft	.05	@	.05¾
Common Bogus	.02½	@	.02½
Delivered New England points			
Straw Board, rolls	.009		57.50
Straw Board in Sheets, basis 35s to 70s			53.50
Filled News Board			47.50
Chip Board			45.00
Single Manila Pulp lined board	55.00	@	60.00
Single White, patent coated board bender	75.00	@	80.00
Wood Pulp Board	80.00	@	85.00
Binder Boards	70.00	@	75.00
(F. o. b. Mills)			
Tarred Felts—			
Regular, carload lots	65.00	@	—

Old Papers

F. o. b. Boston

Shavings—			
No. 1 Hard White	3.25	@	3.75
White Blank News	1.40	@	1.50
Manila Env. Cuttings	2.00	@	2.25
No. 2 Hard White	3.00	@	3.25
No. 1 Soft White	.03	@	.03¼
No. 1 Soft White	2.75	@	3.00
No. 1 Mixed	1.10	@	1.15
No. 2 Mixed	.85	@	.90
Solid Ledger Stock	2.50	@	—
No. 1 Books, Heavy	1.10	@	1.20
No. 1 Books, Light	—	@	1.15
No. 1 New Manila	2.25	@	2.50
No. 1 Old Manila	1.60	@	1.75
Print Manila	2.00	@	2.10
Old Kraft	1.65	@	1.80
Overissue News	.55	@	.60
Old Newspapers	.45	@	.50
No. 1 Mixed Paper	.45	@	.50
Box Board, Chip	.45	@	.60

Bagging

Price f. o. b. Boston

Gunny No. 1—			
Foreign	1.75	@	2.00
Domestic	1.75	@	1.87½
Manila Rope—			
Foreign	3.75	@	3.87½
Domestic	4.00	@	4.50
Mixed Rope	1.05	@	1.15
Scrap burlaps	1.35	@	—
Wool Tares, heavy	1.50	@	1.65
Mixed Strings	1.00	@	1.10
New Burlap Cutting	2.15	@	2.25

Domestic Rags (New)

Price f. o. b. Boston

Shirt Cuttings—			
New White No. 1	.11¼	@	.11½
Silesias, No. 1	.07	@	.07½
New Unbleached	.10	@	.10½
Fancy	.05¾	@	.06
Washable	.04½	@	—
Cottons—According to Grades—Blue—			
Blue Overalls	—	@	.07
New Black, soft	.04	@	.04¼
Khaki Cuttings	.05	@	.05½
Corduroy	.03	@	.03½
New Canvas	.09	@	.10

Domestic Rags (Old)

Price f. o. b. Boston

White No. 1—			
Repacked	5.00	@	5.25
Miscellaneous	5.00	@	—
White No. 2—			
Repacked	.04½	@	.05
Miscellaneous	.03½	@	.04
Thirds and Blues—			
Repacked	2.12½	@	2.37½
Miscellaneous	1.75	@	1.90
Roofing Stock—			
No. 1	1.37½	@	—
No. 2	1.25	@	—
No. 3	1.12½	@	—
No. 4	1.00	@	—

PHILADELPHIA

Paper

F. o. b. Mill

Bonds	.07	@	.40
Ledgers	.11	@	.40
Writings—			
Superfine	13	@	.18
Extra fine	—	@	.22
Fine	.20	@	.26½
Fine, No. 2	16	@	.25
Fine, No. 3	.12	@	.20
Book, M. F.	.06¾	@	.07
Book, S. S. & C.	.06	@	.07½
Book, Coated	.11	@	.16
Coated Lithograph	.09	@	.12
Label	.09	@	.12
News	.03¾	@	.04
No. 1 Jute Manila	.09½	@	—
Manila Sul., No. 1	.04½	@	.06
Manila, No. 2	.04	@	.04½
No. 2 Kraft	.05	@	.05¼
No. 1 Kraft	.06	@	.06¼
Common Bogus	.02¾	@	—
Straw Board	60.00	@	65.00
News Board	45.00	@	50.00
Chip Board	40.00	@	42.00
Wood Pulp Board	4.50	@	5.00
(Carload Lots)			
Binder Boards—			
No. 1, per ton	85.00	@	90.00
No. 2, per ton	70.00	@	75.00
Carload lots	60.00	@	65.00
Tarred Felts—			
Regular	66.00	@	58.00
Slaters	70.00	@	72.00
Best Tarred, 1-ply (per roll)	1.85	@	1.95
Best Tarred, 2-ply (per roll)	1.55	@	1.70
Best Tarred, 3-ply	2.10	@	2.15
No. 1 Mixed Paper	.65	@	.70

Domestic Rags (New)

Price to Mill, f. o. b. Phila.

Shirt Cuttings—			
New White, No. 1	.11½	@	.12
New White, No. 2	.07	@	.07½
Light Silesias	.07	@	.07½
Silesias, No. 1	.07½	@	.08
Black Silesia, soft	.05	@	.05½
New Unbleached	.10½	@	.11
Washable	.04	@	.04½
Fancy	.05½	@	.06
Cottons—according to grades—			
Blue Overall	.07½	@	.08
New Blue	.03½	@	.04
New Black Soft	.05½	@	.06
New Light Seconds	.03	@	.03½
Khaki Cuttings	.04½	@	.05
Corduroy	.03	@	.03¾
New Canvas	.08	@	.09
New Black Mixed	.05	@	.05½

Bagging

F. o. b. Phila

Gunny, No. 1—			
Foreign	1.75	@	2.00
Domestic	1.75	@	2.00
Manila Rope	4.25	@	4.50
Sisal Rope	1.25	@	2.00
Mixed Rope	1.25	@	1.50
Scrap Burlaps	1.75	@	2.00
Wool Tares, heavy	2.00	@	2.25
Mixed Strings	1.50	@	1.75
No. 1, New Light Burlap	2.25	@	2.50
New Burlap Cuttings	2.25	@	2.50

Old Papers

F. o. b. Phila.

Shavings—			
No. 1 Hard White	3.50	@	3.60
No. 2 Hard White	3.00	@	3.25
No. 1 Soft White	2.80	@	2.90
No. 2 Soft White	1.90	@	2.00
No. 1 Mixed	1.50	@	1.60
No. 2 Mixed	.90	@	1.00
Solid Ledger Stock	1.90	@	2.00
Writing Paper	1.65	@	1.75
No. 1 Books, heavy	1.15	@	1.20
No. 2 Books, light	.80	@	.85
No. 1 New Manila	2.40	@	2.50
No. 1 Old Manila	1.50	@	1.60
Print Manila	1.00	@	1.10
Container Manila	.75	@	.80
Old Kraft	2.00	@	2.20
Common Paper	.40	@	.50
No. 1 Mixed Paper	.50	@	.60
Straw Board, Chip	.60	@	.65
Binders Board, Chip	.60	@	.65
Overissue News	.75	@	.80
Old Newspaper	.50	@	.60

Domestic Rags (Old)

White, No. 1—			
Repacked	5.00	@	5.25
Miscellaneous	4.75	@	5.00
White, No. 2—			
Repacked	.03½	@	.04
Miscellaneous	.02	@	.02¼
Thirds and Blues—			
Repacked	2.50	@	2.75
Miscellaneous	1.75	@	2.00
Black Stockings	3.25	@	3.50
Roofing Stock—			
No. 1	1.55	@	1.65
No. 2	1.40	@	1.50
No. 3	1.25	@	1.35
No. 4	1.20	@	1.30
No. 5A	.90	@	1.00
B	.80	@	.90
C.	.80	@	.90

TORONTO

Paper

F. o. b. Mill

Bond—			
No. 1 Sulphite	.12½	@	—
No. 2 Sulphite	.10¾	@	—
No. 1 Colored	.13½	@	—
No. 2 Colored	.11¾	@	—
Ledgers (sulphite)	—	@	—
Ledgers, No. 1	.36	@	—
Ledgers, No. 2	.27	@	—
Writing	.09½	@	.10
News f. o. b. Mills—			
Rolls (Carloads)	3.25	@	—
Sheet (carload)	3.75	@	—
Sheets (2 tons or over)	4.00	@	—
Book—			
No. 1 M. F. (carloads)	7.75	@	—
No. 2 M. F. (carloads)	7.50	@	—
No. 3 M. F. (carloads)	7.25	@	—
No. 1 S. C. (carloads)	8.25	@	—
No. 2 S. C. (carloads)	8.00	@	—
No. 3 S. C. (carloads)	7.75	@	—
No. 1 Coated and litho	14.50	@	—
No. 2 Coated and litho	13.50	@	—
No. 3 Coated and litho	12.75	@	—
Coated tinted	.15	@	—
Wrapping—			
Rag Brown	4.85	@	—
White Rag	5.25	@	—
"B" Manila	5.65	@	—
No. 1 Manila	6.65	@	—
Fiber	6.65	@	—
Kraft, M. F.	7.20	@	—
M. G.	7.35	@	—

Pulp

(F. o. b. Mill)

Ground wood	29.00	@	30.00
Sulphite easy bleaching	60.00	@	65.00
Sulphite news grade	55.00	@	60.00
Sulphite, bleached	75.00	@	80.00
Sulphate	65.00	@	—

Old Waste Paper

(In carload lots, f. o. b. Toronto)

Shavings—			
White Env. Cut	3.50	@	—
Soft White Book Shavings	3.00	@	—
White Blk, News	1.40	@	—
Book and Ledger—			
Flat Magazine and Book Stock (old)	1.25	@	—
Light and Crumpled Book Stock	1.10	@	—
Ledgers and Writings	1.40	@	—
Solid Ledgers	1.40	@	—
Manilas—			
New Manila Cut	1.50	@	—
Printed Manilas	1.00	@	—
Kraft	2.25	@	—
News and Scrap—			
Strictly Overissue	.80	@	—
Strictly Folded	.47½	@	.52½
No. 1 Mixed Paper	.37½	@	.42

Domestic Rags

(Price to mills, f. o. b. Toronto)

No. 1 White Shirt Cuttings	.12	@	.12½
Fancy Shirt Cuttings	.06	@	.06¼